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The Bancroft Memorial Lecture.[1]

THE DOG AND THE SHADOW.

By F. KINGSLEY NORRIS,

Director-General of Medical Services, Commonwealth of Australia.

I AM deeply conscious of the honour and I am keenly appreciative of the privilege of the opportunity to deliver the Bancroft Oration.

Bancroft died the year after I was born and there is a simple clear picture of the man recorded at that time:

> All those who had even the slightest acquaintance with Dr. Bancroft recognized in him the qualities which as professional men it should be our aim to strive after—a large-minded wish and endeavour to work for the benfit of his fellowmen in the widest interpretation of fellowmen, taking and encouraging interest in such scientific problems as gave promise of practical value. He was particularly unselfish and had a singular lack of what may be called personal ambition. His greatest delight was to be able to add in however small a way to the sum of human knowledge and to aid in the advancement of useful truth.

[1] Delivered at Brisbane on June 6, 1952.

In the photograph I have seen of Bancroft, his firm eyes command immediate attention despite a generous beard and a flowing moustache. Bancroft's life was not a peaceful one. He was impatient with dilettantes—"Why cannot they busy themselves with something useful?" he said; but he was always ready to help others. His contributions to medicine are known to the world. His was a large mind, but not a magpie mind, which retains a mass of useless information badly catalogued. His mind, whether it turned to *Filaria*, oysters or plants, was focused on purpose and reality. His feet were always on the ground.

Those of you who have listened to or read the orations of the past with the delight and value of which these are worthy, may be sadly disappointed when tonight there will be presented to you no erudite scientific address, no recent advance in the field of medicine or of the allied sciences—rather have I turned back over the centuries to a strange, rather grotesque figure of early history.

At the Villa Albani in Rome there is a stone bust of a rugged, almost repulsive man, Æsopus, who, six centuries before Christ, was a slave. Later, offending the Delphians, he was hurled from a precipice. Was Æsopus a philosopher? We do not know. Are Æsop's fables records of his philosophy? Again we do not know. Certainly there were fables bearing Æsop's name, popular in Athens at the height of her intellectual age; but the fables now extant in prose are almost certainly spurious. However, it is only the old things that endure, and let us turn to the wealth of wisdom known as Æsop's fables, where, as did Bancroft,

the author turned to plants and animals in his allegories, and consider the profound fable of "The Dog and the Shadow".

> A Dog was crossing a plank bridge over a stream with a piece of meat in his mouth when he happened to see his own reflection in the water. He thought it was another dog with a piece of meat twice as big, so he let go his own and flew at the other dog to get the larger piece. But of course all that happened was that he got neither, for one was only a shadow and the other was carried away by the current.

An age of phantasy is a normal period in our young lives. What normal boy or girl has not sailed the Spanish Main, has not soared into the stratosphere or has not talked and played with the fairies at the bottom of the garden? But youth, like all other things, must pass and the power of phantasy should not persist if we grow up. And yet it seems that by grasping at the persisting shadows of phantasy we have become dissatisfied and uneasy and by pursuing fallacies we have often failed to achieve the challenge that Bancroft presented when he said: "Why don't they do something useful?" Useful achievement like the bone in the fable has at times drifted away on the current, and just as the dog in the fable had in the end to go hungry because he had grasped at a shadow, so surely are we showing signs of starvation because we have done likewise.

One melancholy symptom of this starvation is the prominence and popular publicity given to the so-called "nervous disorders"; another is to realize the high proportion of hospital beds in the various countries around the world, occupied by these unhappy people. In the field of psychology as applied to medicine and in the field of psychiatry the intrusion at times of inadequately trained and improperly balanced personnel would appear to have sponsored this age of unreality. There appears no justification for the arrogant assumption of the monopoly of common sense by a small, a very small, section of the community, and after all what is not common sense is generally common nonsense. These people, these mind sweepers, have their place in the scheme of things; but do we always know our place?

Winston Churchill, that master of common sense and soundness, had grave misgivings early in the war, when the activities of these strange people were receiving undue prominence in the armed forces. His comments of 1942, in the "Hinge of Fate", seem valid ten years later.

The shelter and security provided by pseudoscientific jargon would seem at times to lead to softness and frailty and certainly have not produced any robust results comparable with the hardening process of facing facts and taking the consequences and being trained to do so. All goes if courage goes, and that great quality seems nowadays at a discount. We see today in certain countries a policy of streamlining the life of the young whereby difficulties and problems must be pushed aside or solved by cash rather than faced and confronted by effort and sacrifice. As a consequence, when adult life is attained, and again difficulties and problems arise, as inevitably they must and do arise, this sheltering policy being no longer in vogue, the result may be bewilderment or disaster and often cowardice is condoned.

One wonders what happened in the past, before the age of these odd people who probe into privacy so freely and yet leave so much unsolved—an age when for their very subsistence it was necessary for individuals to make an effort, when shelter and security and safety had to be earned and were not to be had merely for the moaning.

What would have happened to this country in the beginning had our forefathers flinched and failed, appalled by the difficulties of discovery and development, and shrinking from hardship, had sought escape in some subtle subterfuge devoid of courage, effort and sacrifice, because they could not take it? This change has come in three generations.

By avoidance of effort something must atrophy—our eyes are elongated by the cinema, our ears by the radio, our legs and our arms elongated by machinery; in fact all except our minds are thus enlarged. As the effort demanded of these organs is becoming less, in line with biological truth atrophy may be expected. Just as their insular security has deprived many birds of their power of flight—the dodos of Mauritius, the moas of New Zealand, the cormorants of Galapagos, and the host of flightless rails of the Pacific islands—so may we humans be accelerating an evolutionary disaster by this worship of the soft and lightened effort.

This, then, is the first shadow pursued—the shadow of safety and security and less effort.

Sometimes even face to face with reality we will not admit it. You remember the man who saved up to buy a really fine barometer. When at last this arrived he unpacked it and discovered that the instrument was indicating a "hurricane". He tapped it but the hand did not move. At the end of the day the indicator had not budged from "Hurricane". Very angry, he wrote a strong note to the store and then went off to the nearby village to post it. When he returned his house had blown away. Do we not see this same spirit, that will not admit the hurricane, abroad today?

Such is our value of the shadow that we fail to be alarmed at the reality of our danger. Not so long ago I stood in the sunshine of Pusan, on the tip of South Korea. Pusan is an ugly city of squalid, grim and dirty buildings housing now about one million people. No little distance from the city is a field which falls gently towards the sea, a graceful field among the bare hills. There in orderly rows are tall white poles from which flutter in the morning breeze the flags of 22 nations. Here is reality, here is richness. Go quietly to this field soon after dawn and you will realize why Korea is named on most maps Chosan—the country of the lovely morning, with exquisitely soft pastel shades of primrose, mauve and powder blue softening for the brief hour after dawn the hardness of that rugged, abrupt, forbidding, primitive country.

Here is reality such as the world has not known for nearly a thousand years. These flags bear witness to a crusade—as when from all the European nations men went forth to conquer the Holy Land—men of faith and of courage.

Here this holy ground of a Korean field enfolds the noble dead of the decent nations throughout the world who came in a crusade to give their lives and left their dead, that reality and danger to the world might be faced and defeated.

To many this is a little known part of the world, and far remote; but you may leave Korea one morning and be in Australia that night. While I am speaking to you one million and a quarter men from 22 nations are fighting, within one day of Australia. That field is the rich reality that you and I are being spared, and that wrong shall not advance nor triumph unchallenged; and yet in our world of unreality, of shadow, we wonder if and when a war may come.

In Korea itself there was to me a strange sense of unreality—a great mass of men and machinery and ammunition facing at first a few with practically no machinery and with relatively primitive weapons. The failure to realize that death may come suddenly from the air, the demanding in a battle of amenities associated with a life of ease and safety, the refusal at times to move without mechanized transport all seemed unreal, when to the enemy across the way these things were unnecessary and human life itself like any other commodity was expendable.

Japan today is perhaps the outstanding example of a country which faces reality, because Japan is a country of daily disaster, and suffering seems at times essential for the truth. Somewhere in Japan every day there is an earthquake or a fire. One may fly in the morning past a lovely quiet mountain and return in the evening to find a glowing mass belching forth fire and smoke. When the rumblings and the tremblings subside and when the fire dies down, well—that is over. The war and those awful calamities of Hiroshima and Nagasaki were just such other disasters, and when they were over, well, again that was

that, and in went the vegetables and the grain, and on went the building, and into the world came the millions of babies as if nothing had happened, and were it not for the millions of dollars being spent each year by the Atomic Energy Commission no one would know that Hiroshima marks an indelible event in the history of the world.

The Japanese are acute realists and during the war in the Islands they reduced reality to barbarous levels when they abandoned their thousands of sick and wounded as just so many liabilities to be passed into the discard to rot in the jungle.

To hope for any success against a primitive mind we must adjust our sense of values to a determination of what we really need.

During the war in New Guinea many thousands of our men were ordered to cross over the Owen Stanley Ranges. Each man had to take with him his bedroom furniture and his dining-room furniture, all the clothes he would need for several weks, enough food for two days, and, as he would always be in danger and as at any moment he might be called upon to fight, he would need arms and ammunition. It would be raining most of the time, and at 8000 feet the rain forest was bitterly cold at night. Being Australians, they were expected to be shaved and clean each morning. As no transport whatever was available, each of these thousands of men had to carry on his person these needs.

Never had they experienced such a challenge as to what really was necessary, but the challenge was accepted and over that weary Kokoda Trail went those men—those men who fought, those men who drove the enemy back into the sea on the far side of the island; and from the setting out on that march until final victory were many months. To one privileged to share in the stark reality of what was probably the last long march of any army, it was disturbing to see a group of healthy soldiers lounging by the roadside in Korea waiting until the transport came to take them to their unit, three miles along a good level road.

You may recall the unreality of the consternation in this country when the first few Australian casualties were reported from Korea. This astonishment was within five years of the cessation of another war wherein we had suffered some 218,000 casualties. The memory of man is short when he grasps at the shadow of surprise that war means wounds—what time he loosens his grip on reality by accepting with complacency as part of our daily life the thousands and thousands of killed and injured on our roads and, as Dr. Southby said in his presidential address:

> The whole situation is tinged with a grim irony when we realize that these losses are brought about as the result of the misuse of a beautiful piece of machinery the outcome of man's own handiwork and ingenuity.

Such is the misuse of this man-devised machinery that approximately one motor vehicle in six each year in Australia is so seriously damaged as to justify a claim on insurance. Based on an assessment of the monetary value of each member of the country we are losing many millions each year because of injuries that mainly could and should be prevented. It is largely a matter of public manners and consideration for others. In London, with its ten million people moving along narrow winding streets, one may seldom see a scratched or dented mudguard. That is good public manners.

Further, to enhance our acceptance of a shadow as against a reality, one of the most active efforts to meet this problem in at least one State is to plan large accident wards attached to overcrowded hospitals, and this at a time when the problem of payment for hospital accommodation is commanding wide attention.

In Victoria a large infectious diseases hospital was established on the understanding that the various municipalities were financially responsible for the care of any patients with infectious diseases admitted to this hospital from their area. Local rates were adjusted accordingly. With the success of preventive measures concerning certain of these common infectious diseases this hospital has almost ceased to function as a centre for infectious diseases, and the accommodation has been made available for other purposes. One wonders if these principles could not be applied to other hospitals—local financial responsibility and more planning to reduce the necessity for hospital accommodation, broadly more attention to preventive and social medicine. In no other English-speaking country is the serious consideration or recognition of the importance of social medicine lower than in Australia.

There are many instances of unreality concerning hospitals when it is realized that the worthiness of a hospital is measured by the amount of sound treatment and sound teaching given to those in need. It is difficult to reconcile the proposed expenditure of more than four million pounds to provide hospital accommodation for 500 children. There is such a crying need for hospital accommodation that surely £8000 a cot is unreal when the true purpose of a hospital is considered. This capital sum surely should extend this service to many more.

In Newcastle-on-Tyne, Professor Sir James Spence, that great pædiatrician, wished to provide additional hospital beds for sick children. Money for the purpose was hard to come by, so he took over a grim area in that city—an area of ill repute, The buildings were unsuitable and inconvenient, but James Spence, a man of courage and of vision, for a small sum established his Children's Hospital planned by himself. If you visit this place you may not recognize it as a hospital. From the outside it looks like and is just another of those interminable English terraces, but when inside you will sense the reality of the hospitality—sick children cared for in cheerful rooms, and with them their mothers glowing with pride and gratitude in this care. There is first-class medical and nursing attention and medical education, and these, after all, are the real purpose of a hospital.

The unreality of many of our maternity hospitals is rather disturbing.

To witness a young girl, who has just completed the anxiety of her first pregnancy and has just passed through the ordeal of her first confinement, lying lonely and apprehensive in bed is a melancholy experience when we remember that her baby, secluded like a snake behind glass windows, is in a distant area of the hospital and may be viewed as are snakes, only through such protection, with a label. The young girl is always anxious: "Is the baby all right? They won't leave him with me to look at." After all, whose baby is it? Has the mother no human right to see beside her the triumph of her love and her ordeal and by glorying in the presence of such a magnificent achievement—to impart her glow to her infant? This influence is denied by this strange, out-of-date and to my mind cruel separation of the mother and child at this vitally important period.

It is claimed that infection is reduced by this routine and that the mother and child rest more. These arguments are theoretical and have recently once again been proved tragically fallacious in at least one State. Most other civilized countries have either never adopted this unnatural mother-child relationship or, having once adopted it, have wisely abandoned the practice. In some maternity homes today it is claimed that this saves time. To save time at the expense of humanity is a cruel assessment of values.

The same strange theoretical false reasoning restricted the visiting times at children's hospitals. At long last, to the great surprise of the staff at Great Ormond Street, daily visits by the parents have proved of very great value, and far from their introducing infection and causing disturbance, the comfort and well-being of the children have eased considerably the problems of the depleted ward staff.

"Give me health and a day and I will make the pomp of emperors ridiculous", said Emerson; and when you come to think of it, these are the two things in life that really matter. Time we have, all there is of it, and health is available to most of us if we want it. As Lord Horder has stressed, governments cannot make us fit, but governments can and should see to it that no section of society lacks the means of health, proper food, decent shelter, ample fresh air, opportunity to work, and a reasonable amount of leisure and room for play. After that it is up to

us, to you and to me, to fulfil our part in the greatest national service we can offer—being healthy.

Probably nothing has played such an important part in history as health, and the conquest of generals by germs is a fascinating story in itself.

One of our greatest handicaps in Australia is our inadequate sense of values. The importance of health gives way to more mercenary and more spectacular achievements; but nothing pays better dividends than health, if we can only rid our minds of the obsession to see our dividends in pounds, shillings and pence.

There is nothing mysterious about health. The man who talks about the secret of good health either is a crank or has something to sell. The popular cry of health has produced a band-wagon on which a host of hoboes have hitch-hiked and made their fortunes. Even in these so-called enlightened days some people believe in mumbo-jumbo and hocus-pocus.

In some States of our Commonwealth we cannot legally restore our electric fuse but must call in some so-called qualified technician, and yet we can take our precious organs, our brains, our hearts, our lungs or any part of our bodies to anyone who has the audacity to treat them, and as long as he does not call himself a doctor he may remain within the law and make his fortune by sheer charlatanism.

We still stand in awe before an advertisement making fantastic therapeutic claims and waste our precious money upon them. Vitamins, nerves, debility, uric acid in the system, they all have a free and spectacular ride on the band-wagon of health.

You may remember that years ago a patent breakfast food—the forerunner of those patented preparations that confront us from hoardings—made little headway against the long-accepted sound and cheap porridge until the powerful propaganda of advertising was polluted with a whisper: "Porridge heats the blood and gives you pimples." The whisper has gone and still goes around the world—you all have heard it—and the day of porridge was done; the patent prevailed and the carton triumphed.

It is all so stupid, so ignorant. I know of no other country in the world where the God-given gifts that mean so much to health are as bountiful as in Australia, and yet we take them so much for granted. The world is too much with us. We have done something; we have dealt with typhoid fever, with diphtheria, and we are probably the only country without smallpox; but what about tuberculosis?

When Edward VII was opening a sanatorium in the south of England he said: "I am told that tuberculosis is a preventible disease." "Well," said His Majesty, "why is it not prevented?" I am prepared to state that if any government had the courage to implement a plan which could be presented, tuberculosis would be eliminated from this country within ten years. Think of it: apart from the saving of the suffering and misery of this condition, what a tremendous saving in manpower and hospital facilities would result! Can you imagine any more glorious manner in which a government could earn enduring fame and respect than by such a courageous and humane act?

We are rather apt to pat ourselves on the back and say: "Look, our infant mortality, our maternal mortality are object lessons to the world; we are good, we are wonderful, we are a race of husky he-men and women." I believe we are good. In the recent call-up for national service of our eighteen-year-olds we had a medical reject rate lower than any other country; but we could and should do better.

War has been responsible for the rapid development of many of the contributions to health. In Korea recently I saw the most astonishing achievements—only one man in a hundred wounded now dies of his wounds. In a filthy country where tetanus, smallpox, dysentery, malaria, typhus and plague are always present, where the summer is hot and dusty, and the winter swept with snow and biting winds, the deaths among our troops from sickness are almost nil.

We have just established a School of Army Health. But why wait for war? Why not have schools of civilian health where all citizens are encouraged and are taught free of charge in the principles of health, and where awards are given for health and not merely for muscles?

Let us dispel the ignorance and remove for ever the misconceptions of the masonic, the mercenary, approach to health.

To walk the road of health is not to tread a tightrope—to make slow and fearful progress with the least bias to the other side, inevitably plunging us into disaster. Normality and health are a broad well-paved road with some bends which call for care, and cross-roads where we must go slow; and there are always fools travelling, trying to divert us to short cuts.

There are no short cuts because there is no hurry to health. "Give me health and a day and I will make the pomp of emperors ridiculous."

What a deal of shadow chasing has been practised concerning child health!

Professor Lorimer Dods earlier this year concluded his second Edward Stirling Lecture with profound wisdom:

> Let me conclude with a special plea for the child whose growth has been slower or more rapid than expected, the child whose body carries an excess of subcutaneous fat, and the child whose external genitals do not happen to conform to some hypothetical norm—a plea for the protection of the vast army of children from unnecessary investigations and treatment and from whispered comments about their "glands", their bodies and their genitals.

Grasping at the shadow of form, we have failed in the reality of function. By representing normality as a narrow line we have often forgotten that efficient function is compatible with a wide range of form. By attempting to fit and confine an infant into this fallacy we have forgotten the individual nature of every child. By submitting a normally functioning child to regular mathematical records and by accepting the dictates of such results we have often forgotten that, however accurate to a remote fraction such records may be, they still require human intelligence for their interpretation and application.

One wonders how many of those "difficult children", those children who make the lives of the parents one long anxiety, those children who will not eat unless the wireless is turned on, while granny and grandpa and the lady next-door dance a ring-a-rosy, are the product of this early association of fuss and bother with perfectly normal function.

By reliance on weights and measures we seem at times to have forgotten to look at the child, and observation and common sense as clinical quarries are cast aside.

It is significant that since nursing mothers have been discharged from the maternity wards earlier than in the past, breast feeding has been established and maintained more efficiently.

As a pædiatric consultant before the war I would probably have legitimately lost at least a third of my practice had mothers ceased to weigh their healthy happy babies who suffered from nothing but the effect of fuss fostered by those inquisitive but lazy people who rely fallaciously upon a formula, rather than upon the sound foundation of intelligence and common sense.

Charts have been produced indicating beyond doubt vast reduction in our infantile mortality; but I venture to submit that these magnificent results have been achieved not so much by attention to dietary deficiencies or devotion to decimals as by direction to dirt.

There is a deal of bewilderment concerned with the unreality of so-called modern art. For some years Miss Naumberg has been working under medical direction in America in the study of art production in relation to emotional disorders. When we visit certain exhibitions of so-called "modern art" we realize the vast scope of such a study. James McNeil Whistler, that strange mixture of artistry, wisdom and invective, spoke truly of the compelling honesty of art: "Just as a keyboard contains the

notes of all music, so does nature contain the elements, the colour and the form of all pictures. As the musician gathers his notes and forms his chords until he brings forth glorious harmony, so does the artist with knowledge and skill choose and group these elements of nature into a beauty and a joy, for in art beauty and joy go hand in hand fearing naught and dreading no exposure."

But just as with its primitive brain an infant or an imbecile may bang upon a group of notes producing a horrid, hurtful cachination, so may a person, devoid of intellect, given the keyboard of Nature, a palette and some paints, produce a chaos.

A successful picture so often looks simple; the years of intelligent hard work and study that make this picture possible are hidden in its artistry. To the unintelligent and lazy this effort, this sacrifice, are unknown and, grasping at the shadow of effortless success, these poor people fail pitifully and the result is a crude chaos.

These remarks cannot be interpreted as an advocacy of photographic art—but a plea for reality, for truth. Art is happy and healthy. The artist's face is shining, his head is held high as he has created something of joy. These other strange people, like their products, are so unhappy and one resents their attempt to flaunt their misfortunes in the face of healthy, happy people. The same shadow of untruth and unreality which has for a brief space striven to intrude upon pictorial art is sadly apparent in others of the fine arts. So-called modern verse has suffered.

What has brought about this futile and dangerous chasing of shadows? Why have we turned to a wrong sense of values?

It has been suggested that to recognize reality often requires effort, and in our pursuit of ease we are not prepared to make this effort, and what little critical sense we possess has been numbed by propaganda and advertisement. For our unreality in regard to health our education must accept its share in this responsibility. This is not the place nor the time to pursue this problem.

In this city, you yourself, Mr. President, and others have very ably indicated some of the impediments to progress in medical education and you have been supported by many others. There is an awakening throughout the English-speaking world concerning this great question.

But perhaps the most dangerous determinant to our unreality has been the pursuit of a principle so ably presented to the Commencement Ceremony at the Virginia University in 1948 by David E. Lilienthal. This principle can be summed up in the phrase "Take care of Number One".

It all began early in the nineteenth century with that dangerous dictum of Adam Smith and Jeremy Bentham. Happiness and prosperity could most readily be realized by the exercise of self-interest by every individual. This unreality was supported by the Manchester economists who, like their kind, seem seldom to consider human nature and human beings. Members of the government and the growing host of manufacturers fell for this fallacy. No one should interfere with other people. Employers should be free to strike any bargain they chose with their employees. People should be free to live in any squalor they selected, legislative interference with unbelievably filthy dwellings and incredibly harsh conditions of labour would make confusion only more confounded, as pain and suffering were considered right and just among the working people. This was the policy in Great Britain about one hundred years ago, in a country which had successfully abolished slavery throughout the British possessions, had rendered cock-fighting and bull-baiting illegal on the grounds of cruelty, and had recently reduced the crimes punishable by death from one hundred and fifty to six.

Adopting this dreadful laissez-faire attitude, pit owners were free to employ in their mines boys and girls of six years of age for sixteen hours a day with no half-holiday on Saturday. One pit owner employed a child of three. For a daily wage of a few pence these little children, boys and girls, stripped to the waist, were harnessed to trucks and made to crawl along passageways down in the mines, sometimes only eighteen inches high. It was held that only by allowing every man to pursue his own interest could production succeed and to limit the working hours would ruin the country. You may read of these horrors of the 1840's in the first report of the Children's Employment Commission, in the reports of Lord Ashley, and in the English papers on the condition of the working people in England. In the factories and mines three times more women and children were employed than men. The Chartists came forth with their plea for humanity—tragic riots broke out in the smoke-ridden, filthy, pestilent midlands, riots which rose in fury and then fell, foiled and frustrated not so much by the soldiery as by stark starvation.

But Carlyle, Dickens, Disraeli, and Kingsley bent their pens to the challenge and the bloodless social revolution in Great Britain over the last hundred years must surely be recorded in history as one of the greatest achievements of all time.

But it has been said that the only lesson we learn from history is that we do not learn from history, and another shadow to which we cling is the belief that a situation we encounter is entirely novel. May I quote from an editorial:

> It is a gloomy moment in history. Not in the lifetime of most men has there been so much grave and deep apprehension; never has the future seemed so incalculable as at this time. The political cauldron seethes and bubbles with uncertainty, Russia hangs, as usual, like a cloud, dark and silent, upon the horizon of Europe; while all the energies, resources and influences of the British Empire are tried more sorely in coping with its disturbed relations in China. It is a solemn moment, and of our trouble no man can see the end.

A solemn moment? Yes, this editorial was right. But it was not the end of the world. This editorial, so parallel to conditions now, appeared in the magazine *Harper's Weekly* in October, 1857—almost one hundred years ago.

Most events, most situations, may be paralleled in the past.

Are we not facing once again the unreality of that danger of self-interest?

Thank God we have practically obliterated those blots of human cruelty. Those dreadful working conditions have gone; but surely if anyone had calmly asked the question how best can a widespread prosperity and well-being be achieved in Australia, the answer must have been, by all of us doing a decent job of work. But no, by spending a great deal of time and money in the courts, we grasped at the shadow of answer of working less, and—well here we are today, because while giving less we are striving for more and deciding many great questions by the immediate effect on our own personal pocket and our own personal leisure.

The idea was a simple one; it was almost universally accepted; it seemed eminently sensible. If everyone devoted himself to his own success, to his own advancement, if everyone took care of Number One and concentrated on that, why obviously the sum total of the successes of all the Number Ones would be prosperity and happiness all around and an end to poverty; in brief, a golden era.

Taking care of Number One was not, however, confined to individuals; it applied to groups. If farmers looked out for their own interests, if organized labour and industrial management did the same for their respective interests, if physicians and lawyers and bankers and bond salesmen and ship-builders and merchants each looked out for Number One, then all the Number Ones would be looked after.

The same philosophy dominated internal relations of the twenties. Since we felt this was a good philosophy for individuals and for groups, naturally it was a sound idea among nations too. If the United States concentrated on advancing the welfare of the United States, and if Germany did the same, and Britain the same, and France and Russia and all the other nations, then the philosophy of "Look out for Number One", by each nation paying strict attention to its own business, the sum total would be prosperity and peace for all.

The idea seems sound; it was what we then liked to call "just plain common sense". We have made the simple discovery that not only was poverty unnecessary, but so was war. To make sure of it, all the Number Ones who were each going to look out for himself, got together and signed an eloquent piece of paper agreeing that there would be no more war.

For a time the idea worked wonderfully well. It was, by and large, a time of easy earning and free spending. We did not know then, as we do now, that in a time of rising prices, of inflating values, you really have to be very dumb indeed to fail to make money. So in our naïveté, we attributed this easy success to our great talents.

Nations found the idea worked well, too. We protected our own industries by high tariffs, and other nations took measures they deemed appropriate to take care of their prosperity. Taxes were relatively low, and the budget was balanced. What need was there for expensive armies and navies, since we had a piece of paper that said officially that war had been outlawed?

But to say that taking care of Number One did not work is a masterpiece of understatement. Judged by the implacable and merciless test of results—a prostrating depression followed by a terrible war—it was soon made clear that the philosophy was somehow tragically in error.

Each man took care of himself, but the sum total of all this self-reliance was that the devil not only took the hindmost, but the foremost and those in between. Each nation tended to its own affairs, but the net result was not the end of war, but the greatest war of all time, and a vastly unhappy, mistrustful world.

Is the future, then, so grim? Has the current borne away all the substance, leaving only the unworthy shadows? Is there, then, no place for the visionary?

Our profession of medicine has a deal to answer in the denial of those great visionaries, such as Pasteur and Lister, and the host of other vast men who by their lonely persistence in their visions gave this world so much. But their visions were not fantastic; they were born of truth and honesty and pursued with courage and with feet firmly upon the ground.

Is materialism the only reality? Must reality be a matter of touch and of sight?

We older people, perhaps because of our obsession with material things, have made rather a mess of this world, and at long last are returning to a realization that reality may be sensed as well as seen. And because I believe that is so, I have enduring faith.

I ask you to take your minds back to a day earlier this year, Friday, February 15, the day of the King's funeral. Remember that one hundred years ago people cried that the Crown was a dawdling, useless thing. Some there were among us who thought and said our monarchy was but a shadow—the Throne was of no substance and royalty was unreal. But suddenly throughout this great Empire there was a hush and we were keenly aware of the reality, a deep personal sorrow. Not only a King, but a great friend, one of our family, has gone from among us.

Those of us who listened to the broadcast of the solemn ceremony in London on that Friday were deeply moved.

We stood in the great noble hall of Westminster under those dark beams that had been hewn from colossal oaks which were already old when Alfred was our King. This venerable hall has seen the tragedies of British history over many centuries. Here came King John after Runnymede, here King Charles I was tried and condemned, and here our King's father, George V, lay in state before his people, as did his son on that Friday, the Imperial crown and the Royal emblems resting on the scarlet, blue and gold of the Royal Standard among the silent flowers about his bier. The banners of history, the crown of majesty and the flowers of affection.

Outside the heavens themselves were draped in grey, sombre, wintry clouds, and soft rain was falling as the King moved on his last Royal progress amid the solemn and dignified pageantry of London, the heart of the British Empire.

Beside him went the Royal Family and his close personal friends; watching over him and marching in perfect order with him for the last time went his guardsmen in all their panoply, as his pipers sounded their lament.

Because this was a personal grief, the people of Great Britain brought their offerings of flowers—a few primroses, a hand clasp of violets, personal tributes to their King.

This came to us, to all his people throughout the world, and we were deeply moved. This was a reality.

Those of us who had spoken with our King were greatly privileged. There was no sense of his slightness when we stood before him—his fine features, his strong blue eyes, the firm clasp of his hand were those of a King. But on his face were indelibly writ the ordeals of his life.

Never a strong man, he had served with his people in two world wars and served as they served. He never flinched. When his home was bombed he remained and mingled with his people, who, with him, had been strengthened to suffer and to stand. It was fitting that his Government, by the hands of that grand man Winston Churchill, should lay at his feet a simple wreath inscribed "For Gallantry". He who founded the George Cross had truly earned this award.

Then came to this King, who had suffered so deeply, who had served so bravely and so splendidly, a great mercy—quietly in his sleep he passed on to Valhalla.

But to remember this solemnity, to pay homage to a great memory is not enough. Remembrance, that it may be real, that it may not be morbid nor in vain, must lead to resolution. Just as that weeping, wintry sky in London gave way to a wan sunshine, we must pass beyond our grief.

How nobly has John Masefield, the Poet Laureate, expressed our thoughts:

> The everlasting Wisdom has ordained
> That this rare soul, his earthly service done,
> Shall leave the people over whom he reigned
> For other service at a higher throne,
> Where life's rewarders sing at triumphs won
> In nobleness attempted and attained
> Through years more terrible than any known.
>
> What is a nation's love? No little thing;
> A vast dumb tenderness beyond all price;
> Surely a power of prayer upon a wing,
> The living anguish of a hope to heal
> Offered by all hearts here in sacrifice
> To spirits bowed in sorrow for the King
> That it may touch, to comfort or anneal.
>
> May this devotion help them in their grief.
> May the devotion kindle the resolve
> To make this stricken country green with leaf,
> Glad with another hope to be again
> A sun about which singing orbs revolve,
> A kingdom grown so worthy of her chief
> That millions yet unborn shall bless her reign.

The history of Great Britain and of the British people is a record of crises and calamities overcome by reality, strength and faith. Always in the darkness, as is our Empire today, as we were in the wars, someone has come forward to lead us upwards towards the light. So it is now.

I believe that with the coming of our young Queen once again we have been granted in God's mercy a symbol, a reality, a standard about which we must rally and advance.

Do you recall the vow by our Queen on her twenty-first birthday:

> There is a motto which has been borne by many of my ancestors—a noble motto, "I serve". Those words were inspiring to many bygone heirs to the Throne when they made their knightly dedication as they came to manhood. I cannot do quite as they did, but through an invention of science I can do what was not possible for any of them. I can make a solemn act of dedication with the whole Empire listening.

I should like to make this dedication now. It is very simple. I declare before you all that my whole life, whether it be long or short, shall be devoted to your service, and in the service of our great Imperial family. I shall not have the strength to carry out this resolution alone unless you join in with me, as I now invite you to do. I know your support will be unfailingly given. God help me to make good my vow, and God bless all of you who are willing to share in it.

To each of us our Queen has said: "I now invite you to join with me in my resolution to serve my fellow men and women." This is a realistic challenge to that will-o'-the-wisp, that shadow—self-interest.

Bancroft was not misled by this *ignis fatuus*. He served his fellow men, and now once again comes this challenge, this call, from a young lady who has come to the British Throne, as it came to a simple man from Samaria on the road that goes down from Jerusalem to Jericho, and as it came in The Call to the people of Australia last year.

If there is, and I am sure there is, a spark of chivalry throughout our Empire, this spark must be kindled into a great, a real flame of faith and resolution by this challenge, this call ringing in our ears, in our hearts, in our lives—this reality of a visionary: "Help me to serve my fellow men."

God save the Queen.

ABDOMINAL PAIN IN CHILDHOOD.[1]

By HAMILTON STUART PATTERSON,
Ipswich, Queensland.

SPEAKING as one who has chosen general practice as a career, I do want to say this by way of preface: I believe that in the past fifteen or twenty years general practitioners have shown an increasing lack of interest in children's work—particularly that in connexion with infants. When, for instance, we are consulted by a mother who is having feeding difficulties with her baby, we so often advise her to "go to the clinic".

This implies no criticism of the baby clinics, which I believe are doing a really splendid job. But surely the ideal is for the family doctor to have continuity of supervision of his private patients from birth, through infancy and childhood, and then to become the trusted adviser when the child has grown to adulthood and has children of his own.

This, however, is getting away from the subject.

It is my purpose to discuss, very simply, what are, in my experience, two of the commonest forms of abdominal pain in children encountered in ordinary general practice.

Simple Abdominal Colic of Infancy.

The first is the simple abdominal colic of infancy, usually met with at any time from the age of a week or so up to the time the baby is perhaps nine or ten months old.

It is often the nervous, highly strung infant who is affected, but if we exclude organic causes such as pylorospasm, fat intolerance, intussusception *et cetera*, the cause is usually "feeding too fast or getting too little".

The Baby Who Feeds Too Fast.

We all know the infant who "gollops" his milk (whether from breast or bottle) and gets severe "collywobbles" in consequence.

If the baby is breast-fed the mother usually admits that her milk comes too freely and that the baby is too greedy. When this happens, matters can be assisted in several ways:

1. The mother is instructed to hold the nipple between her first and second fingers and help to regulate the flow of her milk.

2. She can be advised to take the "edge" off the baby's appetite by giving him half an ounce or so of boiled water, glucose water or dill water immediately before the feed.

3. She is shown how to lay the baby in a comfortable horizontal position during feeding. This often induces quieter feeding.

4. A warm bath before feeding usually causes him to relax and feed more placidly, and a hot-water bottle against his "tummy" is often a great help when he gets an attack of colic.

With regard to the bottle-fed baby, the mother is often quite unconscious of the fact that he is taking his milk too fast. If the feeding bottle is held upside down, the milk should just drip when the bottle is given a gentle shake. Sometimes the hole in the teat is so large that the milk just runs out. In such a case the mother is instructed to replace the teat with a new and "harder" one. ("Harder" is used in the sense of having a small hole in the teat, it being necessary for the baby to suck very vigorously to obtain any milk.)

The Baby Who Gets Too Little.

When the baby is getting too little this may be due, of course, to inverted nipples or to an inadequate flow (in the case of a breast-fed baby) or to a "hard" teat (in the case of the bottle-fed). The first two conditions, that is, the inverted nipples and the inadequate flow, may or may not be rectifiable, but with the "hard" teat it is a simple matter to enlarge the hole in the teat and so prevent the baby from sucking madly with little result other than to swallow great gulps of air, which in a very short time produce an attack of colic.

Lastly, with regard to drugs, this prescription is so invariably effective in the treatment of the simple abdominal colic of infancy that it might almost be called a specific:

℞
Sodii Bicarbonatis gr. ii
Glycerini m. ii
Spiritus Ammonii Compositi m. ii
Aquam Anethi ad 3i

This prescription is intended for a baby aged a week or so and can be given when required or before every feed for a time until the trouble lessens. The addition of either tincture of belladonna (say one or two minims) or phenobarbitone (say one-sixth of a grain), or both, is frequently useful.

"Chronic Indigestion", Cyclical Vomiting, Ketosis et cetera.

The second very common cause of abdominal pain in children is that variously labelled "chronic indigestion", cyclical vomiting, ketosis *et cetera*, and here the age group shifts to the five to twelve year olds. Personally, I see far more of these children in the hospital out-patient department than in private practice, and this is not to be wondered at, as home conditions and management of these children are frequently faulty.

Again, it is the nervous, highly-strung child who is brought to us, and the complaint is of recurrent abdominal pain, accompanied sometimes by vomiting and sometimes also by a comparatively high temperature.

The attacks often coincide with a period of nervous excitement—for example, starting at a new school, school examinations, the Sunday following a Saturday afternoon party, or an afternoon at the pictures.

I believe that there are three chief causes of this type of indigestion with its accompanying abdominal pain.

The first is mismanagement in the home. In this respect I think it is most important to inquire into the psychological background of every child complaining of abdominal pain. Frequently there is domestic strife; the children rush through their meals; and they almost invariably stay up late at night listening to a succession of wireless serials or going to the pictures. (In parenthesis, it is really extraordinary how many children get along

[1] Read at a meeting of the Queensland Branch of the British Medical Association on May 2, 1952.

with insufficient sleep and rest.) How much we can do to correct such mismanagement is difficult to know, but occasionally the parents do cooperate effectively.

The second chief cause of this type of indigestion is faulty diet. The frying pan appears to have become chief amongst the armamentaria of many modern housewives, and the greasy, stodgy brews that emanate from it must be responsible for much of the chronic indigestion in childhood. Fried fish, potato chips, hot pies, tomato or Worcestershire sauce and bread and jam still constitute quite a considerable proportion of the diet of children even in this country. Then there is the other extreme, the conscientious mother who believes in the efficacy of cod-liver oil and large quantities of milk, forcing these down the throats of her unwilling children who have, so often, an intolerance to fats. The ultimate effect upon these children is very much the same as it was on the frying-pan brigade. The child has recurrent episodes of upper abdominal pain and often vomits.

An interesting point is that if one asks the mothers whether as babies these children frequently vomited sour-smelling, partially digested milk, they will frequently recollect that in fact they did, and it is apparent that right from the beginning these children had difficulty in metabolizing fats, but the fact was never appreciated nor the difficulty adjusted. And now, when they are in the five to twelve years old group, they present with evidence of chronic indigestion.

The third chief cause of this type of indigestion occurs in the allergic child. I am quite sure that some children not only have difficulty in absorbing and digesting fats, but they are actually allergic to them (or to certain other substances, such as eggs, oatmeal, chocolate, oranges and tomatoes). I believe, moreover, that the allergic abdominal pain that occurs in consequence is much more common than is usually recognized.

When their history is taken there is often a clear family history of migraine, asthma, infantile eczema *et cetera*, and one frequently elicits the fact also that these children can often tell beforehand that an attack is imminent. Again, it is important to recognize the psychological aspect, just as we have now come to do in the case of the asthmatic. Usually, the child is emotionally unstable and so also are the parents (one or both), who may be over-anxious, over-protective or domineering.

The abdominal pain that accompanies these attacks is often intense, and it varies in position, though the most common sites are the umbilical area and the right iliac fossa. It is almost certainly due, I think, to spasm of the smooth gut muscle *plus* urticarial œdema of its mucous membrane, with consequent retention of fæces and hence symptoms of partial obstruction. Retching or vomiting sometimes precedes the pain and often there is raised temperature.

It is not surprising, therefore, that appendicectomy is often performed upon these hapless youngsters. Others are regarded as suffering from pyelitis, from worms or from other ill-defined conditions. The more fortunate ones fall into the hands of a practitioner who, recognizing the condition, obtains better results with the diet of low fat content, some good advice to the parents and this mixture (a most useful one):

℞
Sodii Bicarbonatis grs. v
Dextrosi grs. x
Aquam Chloroformi ad 3i

One teaspoonful is given three times a day after meals or as necessary.

Tincture of belladonna, three to five minims, may be given to increase its efficacy, or alternatively the following prescription:

℞
Tincturæ Belladonnæ m. v
Elixiris "Benadryl" *ad* 3i

This would be rational in view of the allergic nature of the pain.

Lastly, a hypodermic injection of adrenaline, three minims, often works like a charm.

ABDOMINAL PAIN IN INFANCY.[1]

By FELIX ARDEN,
Brisbane.

I WANT to speak about the baby who is brought with the statement that he has been "screaming with pain in his stomach". So says his mother. Is she correct in her assumption that because her baby cries and draws up his legs he must have abdominal pain? Generally, yes. What are the most likely causes? Leaving aside surgical emergencies, about which you will hear more later, I think the causes may be limited to five, and of these only two are really important.

Underfeeding.

Hunger is perhaps the commonest reason for abdominal pain in infancy. We have no means of telling whether it is real pain or whether there is actually some other sensation, but you will concede that a lusty infant deprived of his feed shows every indication of extreme distress. Apart from showing signs of abdominal pain, restlessness and lack of sleep, the underfed baby may vomit. This is surprising, but he vomits usually in the process of eructating wind, and this in turn has generally been swallowed while he was sucking gamely at an empty breast. He may also be constipated or have the so-called "starvation stools" —small, green, frequent, non-odorous, and lacking in fæcal matter. Last, but not least, his weekly gain in weight will be inadequate.

Curiously enough, hunger may be the last thing the mother thinks of. She is often misled by the belief that if her baby spends enough time at the breast he must get enough milk; or that if she can express a little milk at the end of the feed there must have been enough and to spare, forgetting that her fingers are stronger than his powers of suction. She may be deceived also by a satisfactory result from a single test feed, and consequently is apt to put her baby's trouble down to the unsuitability of the breast milk he is receiving. It is remarkable how often the abdominal pain disappears when one offers additional complementary feed.

Supposing the baby is bottle fed, is there any means of calculating whether he is receiving enough? The arithmetic is simple. For example, a ten-pound baby requiring 500 Calories a day may be partaking of the all-too-common mixture known in Queensland as "Modified Milk No. 3" (milk two parts, water three parts, lactose 5%, 14 Calories per ounce) in four-ounce feeds three hourly, six times a day. If so, he will be receiving only 56 Calories at each feed, or 366 Calories daily. I have assumed that babies need 50 Calories per pound per day, but, like older people, they vary enormously in their food requirements and some want much more. To return to our ten-pound baby, an adjustment to give him milk three parts, water two parts, lactose 5%, 18 Calories per ounce, in five-ounce feeds would supply 90 Calories per feed, or 540 Calories daily. Often such a simple measure as this will cure a very real pain.

Overfeeding.

Overfeeding is in my experience a much less common cause of pain. One might say that with a breast-fed baby overfeeding never occurs. He either stops sucking when he is full or spills out the excess. With the bottle-fed baby, likewise, quantitative overfeeding hardly ever happens, although he may become a little uncomfortable if the amount is too much and the teat is so easy that he takes it too fast. Qualitative overfeeding can happen, of course. One may have given the baby a cow's milk mixture which is unsuitably modified, so that large, tough, casein curds form in the stomach and cause discomfort during their passage through the gut. I have also encountered pain in some babies fed with acid milks, the probable explanation being that such infants already have a fair degree of gastric

[1] Read at a meeting of the Queensland Branch of the British Medical Association on May 2, 1952.

acidity and would have preferred some other modification of their formula. Genuine pain can also follow over-generous administration of solid foods to young babies. As practitioners we need to steer a middle course between the timid custom of underfeeding babies in case we upset their digestions and the ambitious practice of putting them on to square meals at a tender age in an effort to achieve sturdy physique. Careful questioning of the mother will disclose the dietary programme. Overfed babies are usually overweight and in fact show little sign of trouble except their abdominal discomfort, and they respond well enough to sensible adjustments.

Wind.

I have never been able to satisfy myself that "wind" is an important cause of pain. It comes as a surprise to many mothers to know that air is normally present in every stomach and that it is not "caused" by anything or formed locally, but has been swallowed with the food. Babies, being less skilled than older people, seem to swallow more air and become uncomfortable after feeds until they can reduce their gastric distension. This is not a painful procedure nor does the failure to bring it up distress them greatly as a rule. Admittedly, babies who cry a great deal from other causes often bring up a lot of "wind", but in these cases the swallowing of air is the result of excessive crying and not the cause. I hope during the discussion to be enlightened about the reason why Queensland mothers use sodium citrate tablets so frequently. They are generally known as "wind tablets" and are given to babies who cry from underfeeding, excitability and so forth. So far as I can discover the only value of sodium citrate in infant feeding is to make the curd of cow's milk a little softer, but the tablets are prescribed by local chemists just as often for breast-fed babies. I feel we should avoid the easy diagnosis of "wind" as the cause of anything that looks like genuine abdominal pain.

Colic.

True intestinal colic comes into a different category, the main causes being dietary indiscretion and intestinal infections. Dietary indiscretion in small babies is perhaps the same thing as the qualitative overfeeding already mentioned and occurs particularly if vegetables are inadequately cooked or sieved or if an excess of starch is given. Babies at the crawling stage may also supplement their meals with paper, buttons and other indigestible substances. The onset of gastro-enteritis is accompanied by severe intestinal colic in some cases. Vomiting and pain may precede the appearance of loose motions by as much as twelve hours, sometimes making early diagnosis very difficult.

Overexcitability.

After hunger, overexcitability is the commonest cause of abdominal pain in infancy, and the disease is on the increase. Modern living conditions predispose to it. One sees it especially in first-born children whose parents are tense and excitable and have read too much about the management of infants. Often the parents share a house with their "in-laws" or live a high-pressure urban life in a small flat. The baby is surrounded by admiring adults and probably does have genuine abdominal pain, perhaps from irritability and spasm of his intestinal musculature. He cries, seems hungry, yet will not be fed. He needs sleep and will not be put down. He worries his mother, naturally enough, and the more anxious she becomes the worse her baby grows. There is very often vomiting from associated pyloric spasm, which the distracted mother interprets as indigestion. She tries a new food with no better results. These babies are thin, tense, alert and active. They smile easily, jump at the least sound, and wave their arms and legs constantly. They tend to take less than their full feeds, pulling away from the breast or bottle, crying as though in pain and refusing the remainder. I do want them to be recognized as genuine sufferers in need of medical care. They require not isolation and neglect, but comfort, affection and unstimulating handling. People should not try to make them smile or secure their attention. They also need adequate sedation. For a baby of three months of age a mixture containing one-eighth of a grain of sodium phenobarbital, or two grains of sodium bromide with one grain of chloral hydrate, can be added at first to each feed, and when a slight degree of drowsiness is attained, given just as often as is necessary.

MEDICAL CAUSES OF ABDOMINAL PAIN DURING CHILDHOOD.[1]

By P. A. EARNSHAW,
Brisbane.

"NEVER neglect a pain in the abdomen" was the advice given several of us students many years ago by the late Sir Herbert Maitland. This direction is even more cogent in the child than in the adult. Signs of grave abdominal illness may appear with greater suddenness in the child and proceed inexorably to a catastrophe if not recognized and treated early and effectively.

We know from experience that the majority of attacks of abdominal pain in childhood have little significance, and it therefore behoves us to be watchful lest signs of an impending abdominal disaster find us off our guard.

However, we may be too zealous in our anxiety to avoid a tragedy and there is the risk of resorting to surgery when it is not indicated or when medical measures alone would be equally effective and devoid of risk.

On account of this thought and also the need to be brief, I have decided to deal in the main with those aspects of abdominal pain which may deceive one into seeking a needless surgical remedy.

Disorders of the Alimentary Canal.

I shall first consider disorders of the alimentary canal.

Insufficient mastication may cause abdominal pain, leading perhaps to vomiting.

For example, not long ago a child was brought to me on account of upper abdominal pain which had lasted an hour. As soon as I commenced my examination the child vomited copiously, the vomitus containing meat which had been cut into pieces the size of loaf sugar. There was no visual evidence of any digestion of the food masses.

I have many times seen children whose mothers stated that the children had much abdominal pain and that they were unable to digest their food. When the mothers were asked why they thought such children could not digest their food, they would say that they frequently saw lumps of food in the motions. I myself have often seen large pieces of food, such as carrot, in the motions of such children. Needless to say, the disorder is not one of digestion but one of mastication. Food should not be swallowed till masticated to the consistency of cream, and then, of course, one cannot recognize by inspection of the motion the nature of the food taken.

As examples of gross overeating I have in mind two children, one who had eaten a whole sponge cake which she found, on returning home from school, in a baking dish on the kitchen table, and the other who had eaten a quantity of dried apricots. In both cases vomiting relieved the symptoms, which were quite severe.

We are all familiar with children who complain of abdominal pain on a holiday or after a picnic. Vomiting usually brings relief.

On several occasions I have had to deal with children with abdominal symptoms whose parents shun fleshy foods and consume an excess of roughage. To misquote Sir Robert Hutchison, they fill their children with wind and themselves with self-righteousness.

I well remember the niece of a senior sister in the Maternal and Child Welfare Department. On her aunt's

[1] Read at a meeting of the Queensland Branch of the British Medical Association on May 2, 1952.

advice, the child had abundance of fruit and vegetable, wholemeal bread and lots of bran breakfast food. Giving the child a bland diet effected an immediate cure.

It sometimes happens that a child will develop a craving for a special food. Only last month a child came to my rooms, the mother stating that it had frequent motions and lower abdominal pain. On inquiry I found that the child would help itself to a proprietary yeast extract several times a day, eating it by the spoonful. The mother considered that the child had one-half to one ounce or more of this preparation a day. I forbade the preparation and the child was immediately well again.

One night, over thirty years ago, the resident medical officer on duty at the Great Ormond Street Hospital for Sick Children was called to see a girl with a history of abdominal pain. The mother presented him with an exhibit consisting of two or three hair balls, which were wrapped in the cover of the *Methodist Recorder* and which she said her daughter had just passed. The child was in the habit of chewing her long hair, and this, collecting in the alimentary tract, formed hair balls, which caused partial obstruction and pain and subsequently appeared in the motions. Late one night some time after this incident I myself saw the same girl in the casualty department of the hospital. She had recurring bouts of abdominal pain. I examined the child and felt an elongated mass in the right iliac fossa. It was to some degree movable and manipulation did not cause discomfort. I admitted the child to hospital. She was later operated on by Mr. H. A. T. Fairbank, now Sir Thomas Fairbank. Through the wall of the exposed ileum were seen and felt several masses, which could be moved easily within the ileum but which did not pass the ileo-caecal valve. These masses were removed and found to consist of balls of hair.

An illustration of them may be seen in Barrington-Ward's book "The Abdominal Surgery of Children". Prevention of further attacks lay in keeping the hair short.

Foreign bodies, such as bobby-pins, I leave to Dr. Fraser to deal with.

Although it is surprising how constipated a child may be without showing symptoms, nevertheless this is not always so. One such child, whose family medical adviser had recommended appendicectomy, proved on a rectal examination to be very constipated. The symptoms were cured by an enema, belladonna and paraffin.

One occasionally meets with children whose parents say that they suffer badly from "wind" and cannot get rid of it. They are always belching. Such children have considerable upper abdominal discomfort. They constantly make efforts to break wind. As a matter of fact they draw into the stomach more air than they get rid of, and so the symptoms are aggravated by their efforts. The simple advice—stop the child trying to break wind—soon brings relief.

Worm infestations, as causes of abdominal pain for which surgery is sometimes considered, are known to us all. I shall make no further reference to them.

Other Causes within the Abdomen.

Fortunately in Queensland tuberculosis of the abdomen is rare. If present it may be confused with such conditions as intussusception and appendicitis. In nearly thirty years' practice in Queensland I have recognized only two cases.

With some trepidation I include primary peritonitis as a medical cause of abdominal pain. In this condition the whole abdomen is tender, toxæmia is extreme, and pain has not been limited at any time to the right iliac fossa. The use of chemotherapy and antibiotics may effect a cure.

Hepatitis in the early stages may cause symptoms suggesting appendicitis. The possibility of infective hepatitis as a cause of indigestion, vomiting and vague abdominal pain should always be kept in mind. The pain, however, is usually referred to the upper part of the abdomen, and such tenderness as may occur is over the liver.

A girl, aged eleven years, was well until early in March this year when she had headache and fever. At the end of March she developed abdominal pain and was admitted into hospital in another town where appendicitis was considered. The parents took the child away from the hospital. I examined her on April 8. She still had pain in the upper part of the abdomen. The mother stated that recently the motions had been "pale yellow like those of a young baby". The girl was admitted to the Mater Misericordiæ Children's Hospital, by which time she was obviously jaundiced. She has since left hospital well.

We have had several cases of hepatitis in the Mater Misericordiæ Children's Hospital recently. In discussion of this matter with my resident medical officer, Dr. Godwin, he tells me that a number of the patients were sent to the hospital with the provisional diagnosis of appendicitis.

Quite often when in London, especially in the case of young children during the summer months, I saw kidneys at autopsy with yellow streaks radiating towards the pelves due to the deposition of urinary sediment in the tubules. Strange to say, one sees this condition less often here, no doubt because our warmer climate compels the drinking of more water. I imagine that such kidneys must cause pain during life. In summer time I question mothers of children with vague unaccountable abdominal pain with regard to the amount of water taken by the child, and in some cases the drinking of greater amounts of water has given relief.

Children with nephrosis are not only prone to attacks of pneumococcal peritonitis, which may simulate appendicitis, but they may also be subject to abdominal crises for which I cannot suggest an explanation, nor have I been able to discover an explanation in medical literature.

At the present time I have under my care in the Mater Misericordiæ Children's Hospital a boy aged eight years. He has been a frequent in-patient since the age of three years on account of nephrosis. He passed much albumin in his urine, he had a low serum-protein value (usually about 3·0 grammes *per centum*) and had bouts of severe œdema and ascites.

One afternoon in February last year he had "cramps" in the abdomen, which became severe by night time. His albuminuria and œdema became worse. Generalized guarding of the abdominal wall was present, with tenderness of the whole of the lower part of the abdomen. There was no distension. The symptoms disappeared in two days without antibiotic or any other treatment.

Since that time he has had several similar attacks, in all of which the symptoms and signs have disappeared spontaneously.

A distended bladder may cause acute abdominal pain. Quite often the cause of the distension is obvious, but in other cases there is no apparent cause. Needless to say, such a condition is easily recognized by abdominal palpation.

In girls approaching the menarche, considerable difficulty may arise in distinguishing from those of appendicitis symptoms associated with the menstrual cycle. Such girls are often plump and well developed and have a neurotic tendency. The tenderness is generally low down in the iliac region, and there are none of the other accompanying symptoms of appendicitis, such as a rise in temperature.

The abdominal wall itself may be the seat of pain, as for example the early stages of *herpes zoster*.

Diseases of Organs Outside the Abdomen.

The beginning of a basal pneumonia with diaphragmatic pleurisy may be marked by abdominal rather than thoracic signs and symptoms. There may be fever, vomiting and abdominal pain. It will probably be found that the patient is flushed, that the temperature is high, and that the respirations are increased out of proportion to the pulse and temperature. In the course usually of a few hours, physical signs appear in the chest.

Last November a small boy, aged five years and nine months, living in a country town had pain in the abdomen on his way home from school one Wednesday afternoon. When he reached home his mother telephoned the doctor, who arrived at 6 p.m. At 8.30 p.m. the child's appendix was removed in hospital. The child was very ill on the

Thursday, and on the Friday the doctor told the parents that the child had "pneumonia also". The child was desperately ill for another three weeks, but eventually he recovered and left hospital a month after the operation.

So-called umbilical colic, apparently associated with tonsillar infection, may be confused with appendicitis. The pain is probably due to enlarged mesenteric lymph glands. Just as the cervical lymph glands may become enlarged owing to lymphatic drainage from the infected tonsils, so infected tonsillar material, having been swallowed, may pass through the intestinal wall to be absorbed by the mesenteric glands. The treatment, needless to say, is the treatment of the tonsils.

When the deep group of glands in the right inguinal region becomes inflamed it may be defficult to differentiate from appendicitis. However, the general upset is usually less obvious, and the colicky pains soon pass off.

Ketosis and Food Allergy.

Ketosis may be due to inability to deal with the fats in a normal diet or it may be due to a gross excess of fat in the diet. In my experience the latter is the most common cause in the child of today. It is surprising how much fat many modern children consume in a day. This applies particularly to butter, eggs, cocoa, milk preparations, dried foods, ice creams, cheese and chocolates. Today I do not ask how often a child has an ice cream; I ask the parent how many ice creams the child has in a day. The answer is often one, perhaps two or three.

If the abdominal pain is associated with headache, a fruity or foul breath and pale motions, and is relieved by vomiting, you may be very suspicious of ketosis. If the mother states that the child used to have many eggs, or many chocolates, or much butter, and has "gone off them" —in other words has got tired of a surfeit of them—you may be almost certain of the diagnosis. The presence of acetone in the urine will be a further aid in the diagnosis, but I take no notice of its absence unless it is absent during an attack. The cure lies in a reduction in fat and perhaps an increase in carbohydrate in the diet. Such children are frequently the victims of motion sickness.

Two months ago I was consulted about a boy of eleven years who had recurring bouts of abdominal pain with nausea and giddiness. He had been told that he had a "recurring appendix", and in March, 1951, the appendix had been removed. The same pains had returned, and the mother was told that the pains were due to adhesions. Questioning the mother, I found that the boy had large amounts of butter, a fair amount of peanut paste and fried foods several times a week, together with other fatty foods less frequently. I cut down the fat in the diet and increased the carbohydrate. I saw the child two days ago. He had had no more giddiness and no more bilious attacks.

The late Dr. Bray stated that the symptoms in cases of ketosis were usually allergic in origin. He said that the foods which commonly caused allergic symptoms were eggs, the dairy products, chocolate *et cetera*, but that they also happened to contain much fat. This has not been my experience. Attention to the fat in the food rather than the elimination of any particular article of diet has cured the symptoms.

Nevertheless, abdominal allergy must be kept in mind, but the subject is too big to be dealt with in this address and no doubt one of the subsequent speakers in the discussion will refer to it as a cause of abdominal pain.

I am sure that Dr. Fraser will be dealing with Henoch's purpura in his address.

The Exanthemata.

Abdominal pain may occur in the exanthemata, especially measles. Appendicitis may be simulated. I once read an article in which it was stated that appendicitis, though simulated, never occurred in cases of measles. I have seen one case of a child suffering from measles with abdominal pain who at operation proved to have a ruptured appendix and peritonitis.

Filariasis.

In Queensland in the past filariasis was a frequent cause of abdominal pain. Between thirty and forty years ago, when a resident medical officer at the Brisbane General Hospital, I frequently saw patients admitted in the night with a diagnosis of strangulated hernia. The patient would be feverish, with redness and pain in the lower part of the abdomen and scrotum which might be severe. A microscopic examination of a thick blood film under the low power would show large numbers of wriggling microfilariæ. With the deportation of the Kanakas and the passing of those whites who were infected in the early days, the disease is now relatively rare.

Drugs and Poisons.

Some medicines may cause abdominal pain, especially, of course, the laxatives, iron and sulphonamides. With the last-mentioned, crystaluria and hæmaturia may be looked for.

Plumbism, prevalent in Queensland in the past, is uncommon today. However, we still meet with the occasional case, and we must keep it in mind. The early symptoms of tiredness, irritability, pains in the legs and pains in the abdomen should put us on our guard, especially if these symptoms occur in a nail-biter or finger-sucker and when lead paint is within the child's reach. Suspicions may be confirmed by the finding of lead lines in the X-ray pictures of bones, an increase in the number of reticulocytes and punctate basophilia in the red blood cells, and abnormal amounts of lead in the urine.

In the past I attended a girl at the public hospital on account of lead poisoning. She was a nail-biter, and there was much lead in the paint on the house. In addition to advice regarding the child's symptoms, I advised the mother to have the old paint removed from the house and fresh paint containing no lead applied. The girl recovered. One or two years later I was called to see the same girl in her home. She had some abdominal pain. No abdominal tenderness was present, nor was there guarding. The child was still a nail-biter. I questioned the mother regarding the paint, and she said that she had done as I advised and that the house was repainted with paint containing zinc and no lead. I sent the child to hospital. The pain continued. Two days later there was weakness of the extensor muscles of both feet. The diagnosis was obviously one of plumbism. I questioned the mother again about the paint, and she reaffirmed that paint containing no lead had been applied to the house. I told her that I intended making arrangements to have some of the paint from the house examined by the Government Analyst. She said that the house had been painted by a friend who would not do such a dishonest thing as to apply lead paint when he said that he would apply paint containing no lead. On the way home that evening the mother met the same painter and told him what I intended doing. He admitted that he had used lead paint instead of zinc paint. The child's abdominal symptoms disappeared with treatment. Some time later during a subsequent visit the mother told me that another doctor examined the child before me and that he had made a diagnosis of appendicitis. Several years later this child died from nephritis.

Hysteria.

Lastly I have come to the functional side with symptoms sometimes due to hysteria, sometimes due to pure malingering. Whatever the cause, the symptoms are the same. It has been said that there was only one matter in which Marie and Babinski were agreed and that concerned the difference between hysteria and malingering—one was moral and the other not. Pain in the abdomen is frequently a symptom, especially in children approaching an examination, in children whose school life is unhappy, and in the first child of a family after the arrival of an addition. Malingering as a cause of pain I think is the more common, but generally it does not persist long enough for the patient to be taken to a doctor. The great majority of such children brought to the doctors are not malingerers. They need sympathy and tact, and we should take pains to discover and eliminate the cause and, if necessary, call in the services of a psychologist.

ABDOMINAL PAIN IN CHILDHOOD FROM THE SURGICAL ANGLE.[1]

By K. B. FRASER,
Brisbane.

ONE can say with some truth that the whole question of abdominal pain in childhood is one of the most difficult problems which the pædiatrician, or for that matter the general practitioner, has to face.

It is rather hard to divorce the medical and surgical aspects of this question, for in so many cases the differential diagnosis includes both medical and surgical conditions.

From the surgical viewpoint, however, it is most important to have an awareness of those conditions associated with abdominal pain which require urgent surgical interference. I refer particularly to acute traumatic emergencies, acute intestinal obstruction and acute appendicitis, for failure to make a correct diagnosis in these cases often means that a life is forfeit.

It is well worth while considering each of these possibilities in some detail.

Sudden trauma to the abdomen of a child may cause rupture of the liver or the spleen, a rent in a hollow viscus or a massive retroperitoneal hæmorrhage.

I will not dwell on ruptured spleen except to say that it is not uncommon and that it may manifest itself in any way from a devastating hæmorrhage to a slow leak which causes no concern for three or four days. Left shoulder-tip pain is a very helpful but by no means an invariable symptom.

I have seen quite large tears in the small bowel from a sudden blow on the abdomen, while our attention has been directed recently to massive retroperitoneal hæmorrhage as a cause of abdominal pain by two cases in children admitted to the Brisbane Children's Hospital within three weeks of each other.

Both these conditions—that is to say, ruptured viscus and retroperitoneal hæmorrhage—are most likely to occur when the patient has received a very sharp and unexpected blow, and should always be thought of when the history reveals this sort of accident.

Turning to intestinal obstruction as a cause of abdominal pain, one thinks immediately of course of intussusception. While this occurs predominantly in the five months to nine months age group, it does occur on occasions in much older children. In a consecutive series of 23 cases at the Brisbane Children's Hospital, four patients were over three years of age.

Adhesions following suppurative appendicitis are a fruitful cause of intestinal obstruction in children. It must be stressed that one should avoid as far as possible operating on patients with early post-operative obstruction and endeavour to carry them on by conservative measures, for the obstruction is often not absolute and by perseverance with conservative treatment can sometimes be overcome spontaneously. On the other hand, late post-operative obstructions are relieved by what is generally a very simple operation.

Rare causes of pain due to intestinal obstruction which I have encountered in the five to ten years age group are volvulus of the small intestine, subacute obstruction at the hepatic flexure as a late result of a Rammstedt operation, and the presence of a mesenteric cyst which stretched a loop of gut and occluded its lumen. Foreign bodies not large enough to cause obstruction do not seem to cause pain unless complications occur as a result of perforation. Certainly a bobby-pin can lie for a long time in the duodenum without any symptoms at all.

This brings us to a consideration of acute appendicitis in children as the third and commonest condition in which an early diagnosis is essential.

This early diagnosis and operation without delay are necessary because of the rapidity with which the disease spreads, in children, to the general peritoneal cavity.

I have seen a case of well-established peritonitis in a child whose symptoms had been present for less than twelve hours. This is particularly likely to happen in the younger age groups, in which unfortunately the diagnosis is correspondingly more difficult.

In my opinion one should, in considering the problem of appendicitis in children, first of all make up one's mind whether the case is one of pain due to possible acute appendicitis or one of pain due to possible recurrent mild appendicitis or, if you prefer so to call it, recurrent appendiceal colic. In almost every case this differentiation between the acute and non-acute condition can be made with ease, and the mental approach to the case depends on this decision.

In the possible acute case, if the appendix remains suspect after all the possible causes have been considered, then laparotomy should be performed.

To delay operation on a patient with acute appendicitis because it might be something else is culpable, as all those who have had long experience of acute abdominal conditions will agree. In effect it means that a short-lived illness, from which uneventful recovery can confidently be expected, is allowed to drift into a hopeless state, or at least one in which the price of recovery may be prolonged invalidity.

In the non-acute type of case, however, there is no justification whatever for surgery until all other possible causes of the pain have been excluded, and even then surgery is indicated only under certain special circumstances.

I do not propose to go into a detailed account of the clinical features of acute appendicitis in children, but I would like to stress the point that many cases do not follow the classical text-book pattern in its entirety. It is the symptom complex that matters, and if one remembers one's mistakes and the peculiarities of previous proved cases one will gradually garner diagnostic acumen with the years.

There are a few points about the acute cases that should be remembered.

Without going into the academic question of the causes of the pain, one can say that in some 10% of cases or less the pain starts in the right iliac fossa rather than around the umbilicus. This does not refer to those children particularly in the younger age groups who, living only in the present and mindful of their immediate right-sided pain, forget that the pain was first intermittent and in the mid-line.

Anorexia is not invariable, and I have seen a child with most obvious acute appendicitis shouting for his lunch.

A normal temperature in the first twelve hours does not exclude acute appendicitis. On the other hand a mouth temperature of 104° F. must always throw doubt on the diagnosis.

In a rectal examination of a small child it is very easy to mistake a full bladder for a pelvic mass.

Some red blood cells or a few pus cells in the urine should not preclude operation if the clinical picture of acute appendicitis is otherwise present, for I have seen this happen quite often.

In a case of pelvic appendicitis early diarrhœa with the passage of mucus-covered stools is not uncommon; it generally ceases when the rectum and lower part of the sigmoid colon have been emptied. Quite recently I performed an immediate operation on a boy, seven years old, who gave just such a history; the appendix was found lying on the rectum, and he had early peritonitis with no walling-off of the inflamed appendix at all.

Finally, in a cooperative child, skin hyperæsthesia over a circumscribed area round or just above McBurney's point will often be the final sign which clinches the diagnosis. This is particularly the case with appendices lying in an anterior position, as this hyperæsthesia is a somatic sensory manifestation originating in the exquisitely sensitive peritoneum of the anterior abdominal wall.

[1] Read at a meeting of the Queensland Branch of the British Medical Association on May 2, 1952.

One must remember in suspected acute cases that it is most important to exclude early pneumonia with diaphragmatic pleurisy, acute pyelitis and the onset of severe infectious hepatitis as a cause of the pain, for unnecessary operation may here have disastrous consequences. Henoch's purpura is in my experience a very rare condition indeed, but like Meckel's diverticulum with its complications, it should never be forgotten.

Acute iliac adenitis should present no difficulty, but acute mesenteric adenitis can present a real problem. It may occur without any associated tonsillitis or upper respiratory tract infection, and is on occasion impossible to distinguish from acute appendicitis.

Turning to abdominal pain due to non-acute cases of mild recurrent appendiceal inflammation or colic, one finds that there are a multitude of conditions with which it may be confused. Most of these have already been considered by Dr. Earnshaw, and I do not propose to discuss them here.

There is, however, one surgical condition the pain from which is often unjustly attributed to the appendix. I refer to right-sided renal colic, which may be due to a number of causes, including hydronephrosis, intermittent hydronephrosis or renal calculus. In fact, no search for the cause of vague abdominal pain is complete without an exhaustive review of the urinary tract, including excretion and, if necessary, retrograde pyelography.

In summary, while I am sure that some cases of vague abdominal pain in children do in fact stem from the appendix—for I have incontrovertible evidence of quite a number of these—I am equally certain that the great majority of such cases are in no way associated with any appendiceal abnormality at all.

Before I conclude I should like to remind you that umbilical hernia, a common condition in young children, is very frequently blamed, quite unjustly, for recurrent mid-line pain. While it is a condition which nearly always requires attention, it is in the vast majority of cases quite symptomless in children.

As opposed to this, epigastric hernia, which is often insignificant in size and may remain unnoticed for some time, is a cause of definite intermittent pain in most cases.

MEGALOBLASTIC ANÆMIA OF INFANCY.[1]

By JOHN H. COLEBATCH and A. L. WILLIAMS,
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Introduction

A CASE of megaloblastic anæmia of infancy was diagnosed in March, 1950, the patient being under the care of Dr. H. Boyd Graham, in the Melbourne Children's Hospital. Very recently another case of megaloblastic anæmia has been recognized in a patient under the care of the same physician; the patient was an infant with steatorrhœa and clubbing of the fingers. This condition has not hitherto been reported in Australia, so these two cases may be the first to have been diagnosed in this country. The earliest descriptions of what was almost certainly megaloblastic anæmia of infancy came from America (Faber, 1928; Cooley and Lee, 1932). Subsequently there appeared a number of isolated reports of this nutritional macrocytic type of anæmia, often misnamed pernicious anæmia, occurring in infants (Bachman, 1936; Langmead and Doniach, 1937; Pohl, 1940; Veeneklaus, 1941; Cole, 1941; Dedichen, 1942; Fouts and Garber, 1942; Davis, 1944; Bass, 1944; Perkins, 1944). Then, in the year 1946, more than fifty new cases were reported, mainly by Zuelzer and Ogden from Detroit, United States of America, and by Amato from Naples. Since then at least sixty more case reports have been published, from United States of America, Canada, Great Britain, Sweden, Switzerland, France, Italy and South America—but none from Australia. Have we been missing such cases in this country?

[1] Read in abstract at the annual meeting of the Australian Pædiatric Association at Canberra, April 8, 1951.

In megaloblastic anæmia a characteristic picture is seen in the peripheral blood and in the bone marrow. In the blood there is anisocytosis, the majority of the red cells being macrocytic; this results in a high colour index and a high mean corpuscular volume. There is usually leucopenia, with reduction in the numbers of both neutrophile polymorphonuclear cells and lymphocytes. The platelets are commonly diminished in number also. This blood picture is associated with, and is the result of, a bone marrow in which there is not an arrest but rather a fault in the production of red cells, and of myeloid cells and megakaryocytes, due to disturbances of nucleoprotein metabolism. The abnormal nucleated red cells are large cells in which the nucleus has an exceptionally fine chromatin network, while the cytoplasm is more abundant and more basophilic than in a normal erythroblast. The myeloid series in the marrow includes giant myelocytes and metamyelocytes, as well as large hypersegmented polymorphonuclear cells sometimes referred to as macropolycytes. The megakarocytes may also appear abnormal.

Anæmia itself is never more than a symptom: the cause must be found and an ætiological diagnosis made if the treatment and prognosis are to rest on a sound basis. The cause of every megaloblastic anæmia is malnutrition, with a particular deficiency of the factors needed for normal nucleoprotein metabolism in the development of the immature marrow cells. Two of these factors are known members of the vitamin *B* complex—folic acid (vitamin B_{11}) and vitamin B_{12}. A deficiency of such factors with consequent megaloblastic anæmia may be produced in several different ways: (i) by simple dietary deficiency of folic acid or of vitamin B_{12}, for example in nutritional macrocytic anæmia; (ii) by lack of Castle's intrinsic factor in the gastric juice, which appears to cause a conditioned deficiency of folic acid and/or vitamin B_{12}, for example in pernicious anæmia; (iii) by malabsorption of these factors through vomiting, diarrhœa, steatorrhœa, gastro-intestinal anastomoses *et cetera*; (iv) by unusually high demands for these factors such as may result from rapid growth, from infections and probably from avitaminosis-*C*. It is common to find more than one of these mechanisms present in a given case.

In children, megaloblastic anæmia has been previously described in association with steatorrhœa, particularly with cœliac disease. Some cases have also been reported in infection, though it is probable that infection has never caused megaloblastic anæmia unless associated with some other condition such as prematurity or dietary imbalance. There have also been several reports in children of allegedly true pernicious anæmia, but they have not been generally accepted. By contrast with these various rare examples of megaloblastic anæmia in childhood, the hundred or so cases recently reported have all occurred in infants between the ages of three months and eighteen months, without steatorrhœa, and in general without antecedent infection. To these cases Zuelzer and Ogden (1946) have given the purely descriptive name of megaloblastic anæmia of infancy.

Clinical Picture.

The nutritional history is of considerable importance as indicated by recent studies (Zuelzer and Ogden, 1946; May *et alii*, 1949, 1950). Wholly breast-fed infants apparently have never developed megaloblastic anæmia during their first six months, except in a few cases reported from Italy during the war, when maternal malnutrition may have been responsible (Amato, 1946). Artificially fed infants with this anæmia usually and perhaps invariably have a history of inadequate intake of vitamin *C*. The previous administration of supplements containing folic acid, for example yeast extracts, has not been described in the history of reported cases.

The symptomatology of patients with megaloblastic anæmia of infancy is remarkably uniform. The first symptom is anorexia, particularly for solid foods. This develops insidiously, occurring usually at the age of four to six months, or earlier in premature infants. There is a failure to gain weight at a normal rate, or actual loss of weight. In some cases these symptoms are first recognizable after an acute infection. Then within a few weeks the infant may develop pallor, irritability, vomiting and perhaps diarrhœa. If untreated, these symptoms will tend to become progressively worse, leading eventually to a precipitous decline with severe anæmia, wasting, and finally an intercurrent infection with death.

Examination reveals signs of anæmia, such as pallor, tachycardia, cardiac enlargement *et cetera*. The liver and spleen are usually enlarged. Beading of the costo-chondral junctions is often present, and radiological evidence of scurvy

has been recorded in 25% of cases. Signs of an infection may also be found.

Diagnosis.

Although the history and clinical findings may suggest megaloblastic anæmia of infancy, this diagnosis is only warranted if supported by appropriate hæmatological evidence. The characteristic blood picture is one of hyperchromic macrocytic anæmia with, in most cases, leucopenia and thrombocytopenia, as has been more fully described above. It must be appreciated, however, that macrocytosis is not always evident. If the diet has been one that will also lead to iron deficiency (which so frequently develops at this age period), then there will also be a tendency to microcytosis and hypochromia. The resultant blood picture will be a dimorphic one, with little or no rise in either the colour index or the mean corpuscular volume. Furthermore, even if the blood does show macrocytosis with a high colour index and a high mean corpuscular volume, it is necessary to remember that macrocytic anæmia can be produced by several relatively common conditions without any megaloblastic changes in the bone marrow. Examples of such conditions are severe hæmolytic anæmia, acute hæmorrhage, certain disorders of the reticulo-endothelial system, cirrhosis of the liver and hypoproteinæmia.

Thus the crucial point in the diagnosis of megaloblastic anæmia of infancy is the finding of megaloblasts in the bone marrow. Sternal puncture in infancy was first recorded by Kato only in 1937, and it was not until 1940 that a case of megaloblastic anæmia of infancy was proven by marrow puncture (Veeneklaus, 1941). In every suspected case the diagnosis should be established by this procedure. There is little doubt that megaloblastic anæmia of infancy is not a new disease; in fact, the weaker milk mixtures and the delayed educational diets of a generation ago probably caused more examples of this condition than are seen today, but the absence of marrow biopsies prevented their recognition.

Ætiology.

Zuelzer and Ogden in 1946 observed that in 25 cases the commonest factors appeared to be malnutrition with hypoproteinæmia, infection and prematurity. Most of their patients had been fed on proprietary milk foods that were substantially the same as our so-called "humanized" dried milk foods, and these preparations contain about 40% less cow's milk and 40% less protein than is present in whole dried milk foods. They found that folic acid or liver extract was generally effective in treating the anæmia, if given early enough. Recent work kindly done for one of the authors (J.H.C.) by Dr. Nancy Hayward showed that pooled breast milk in the neonatal period contains at least twice as much folic acid as is present in undiluted cow's milk. These findings suggest that megaloblastic anæmia of infancy is nutritional in origin and that one factor in its ætiology may be the lower intake of folic acid in the infant fed on diluted cow's milk, particularly when the formula is made up with a "humanized" dried milk food.

Recently the therapeutic value of vitamin B_{12} has been tested in infants with this disease (McPherson *et alii*, 1949; Woodruff *et alii*, 1949; Luhby and Wheeler, 1949; Zuelzer, 1950; Sturgeon and Carpenter, 1950). In about one-third of the cases there was a satisfactory response when this drug was combined with a full diet and added vitamins, but in the majority of cases vitamin B_{12} was not effective. It seems therefore that deficiency of this vitamin is not a significant factor in the ætiology. Another possibility is the hypothesis advanced by Amato that the affected infants may be unable to produce the intrinsic factor of Castle. Many of these infants have a histamine-fast achlorhydria during their illness, though some months later a test meal produces normal amounts of free hydrochloric acid (May *et alii*, 1949); a temporary decrease of intrinsic factor secretion might conceivably occur.

The relationship of vitamin *C* to this disease was studied in 1949 by May and his co-workers. They noted that the age incidence of megaloblastic anæmia of infancy closely parallels that of infantile scurvy. In practically all the reported cases in which an adequate dietary history was given, the intake of vitamin *C* was deficient, often grossly so. Even minimal dietary deficiency of vitamin *C* will cause considerable tissue depletion of this vitamin long before clinical symptoms of scurvy develop. Then, less than a year ago, it was shown experimentally in monkeys that cow's milk preparations, even those of the "humanized" dried milk type, are incapable of producing megaloblastic anæmia if the vitamin *C* intake is adequate; on the other hand, these same feedings without vitamin *C* supplements will invariably lead to a megaloblastic anæmia (May *et alii*, 1950). Finally, in 1948 the American manufacturers of these "humanized" dried milk foods took the step of adding vitamin *C* to their preparations, since when no further cases of megaloblastic anæmia have been reported in infants thus fed. There is little doubt therefore that deficiency of vitamin *C* is another factor in the ætiology of this anæmia. It must be noted, however, that clinical scurvy in infants is only rarely associated with macrocytic anæmia, and that in adults experimental vitamin *C* deficiency *per se* does not produce anæmia of any kind (Medical Research Council Report, 1948). Vitamin *C* deficiency is therefore not the sole ætiological factor.

To summarize, the two main factors in the ætiology of megaloblastic anæmia of infancy are (*a*) deficiency of folic acid and (*b*) deficiency of vitamin *C*, and it is probable that these two deficiencies must be present together. The vitamin *C* deficiency may be gross, but is more often subclinical in degree. The dietary folic acid deficiency is usually also minimal in degree: it is due to the lower folic acid content of dilute cow's milk feedings as compared with that of the breast milk of well-nourished mothers. It appears that vitamin *C* deficiency "potentiates a marginal deficiency of folic acid" (Zuelzer, 1950). These minimal dietary deficiencies are often augmented by the effects of rapid growth, infections, vomiting or diarrhœa. A temporary deficiency of Castle's intrinsic factor and a dietary deficiency of vitamin B_{12} are possible contributory causes that cannot at present be excluded. Hypoproteinæmia may be present, but this has been shown by May and his co-workers to be of no ætiological significance.

Prognosis and Treatment.

Without treatment, the infant with a severe degree of this anæmia is not likely to improve. In fact the tendency is for his condition to deteriorate, sometimes with alarming rapidity, until an intercurrent infection causes death. In the first report of Zuelzer and Ogden (1946), treatment was commenced so late that seven out of 25 patients died, whereas in most of the cases recorded subsequently the patients have shown a satisfactory response to treatment. In less severe cases with minimal nutritional deficiencies the patients may recover without any medical treatment and the condition may consequently pass unrecognized. In these cases an apparently spontaneous recovery may result from introduction of fruits containing vitamin *C* and of foods containing folic acid.

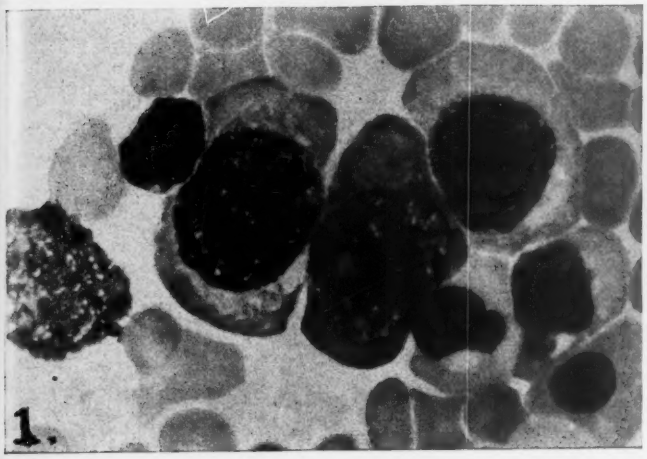
The main requirements in the treatment of the patient are folic acid and vitamin *C*. The amount of folic acid needed will vary according to the severity of the case. A daily tablet containing five milligrammes of folic acid will certainly suffice, and recent work suggests that the minimum effective dose is less than 0·2 milligramme daily (Woodruff *et alii*, 1951). A single intramuscular injection of 15 milligrammes may be adequate if combined with a normal diet (Baker and Sinn, 1952). Liver extract has been effective in cases recorded by Amato and by Zuelzer and Ogden, but folic acid is probably more reliable. A single injection of 20 microgrammes of vitamin B_{12} has occasionally given a good response, when combined with a full diet and added vitamins (McPherson *et alii*, 1949), but as a rule it is ineffective even with repeated injections.

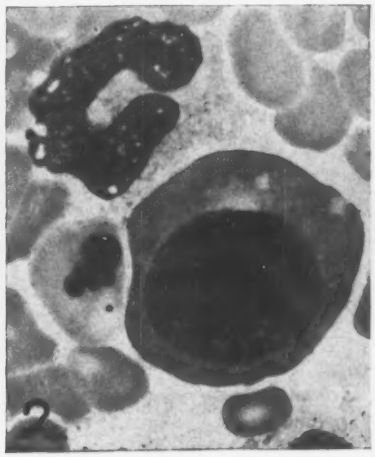
The administration of vitamin *C* is justifiable in every case, if only because of the previously low intake of this substance, but by itself it will produce little change in the blood picture.

A normal full diet with vitamin supplements should be given as a routine, with special attention to foods that contain folic acid, for example, green vegetables, yeast extracts, liver, egg yolk. Blood transfusion may also be required as an emergency measure in severe cases in which the hæmoglobin value has fallen below 35% or five grammes per 100 millilitres. With the smaller infants, however, it is necessary to be extremely careful not to overload the circulation, as is illustrated by the case reported below.

With adequate therapy, the bone marrow and the patient's clinical condition respond dramatically. The therapeutic test in megaloblastic anæmia of infancy is as reliable as is the response to vitamin *C* in a case of scurvy. After parenteral administration of folic acid, the bone marrow shows a remarkable change within twenty-four hours, and reticulocytosis appears in the peripheral blood within three to four days.

ILLUSTRATIONS TO THE ARTICLE BY JOHN H. COLEBATCH AND A. L. WILLIAMS.





ILLUSTRATIONS TO THE ARTICLE BY J. H. W. BIRRELL.

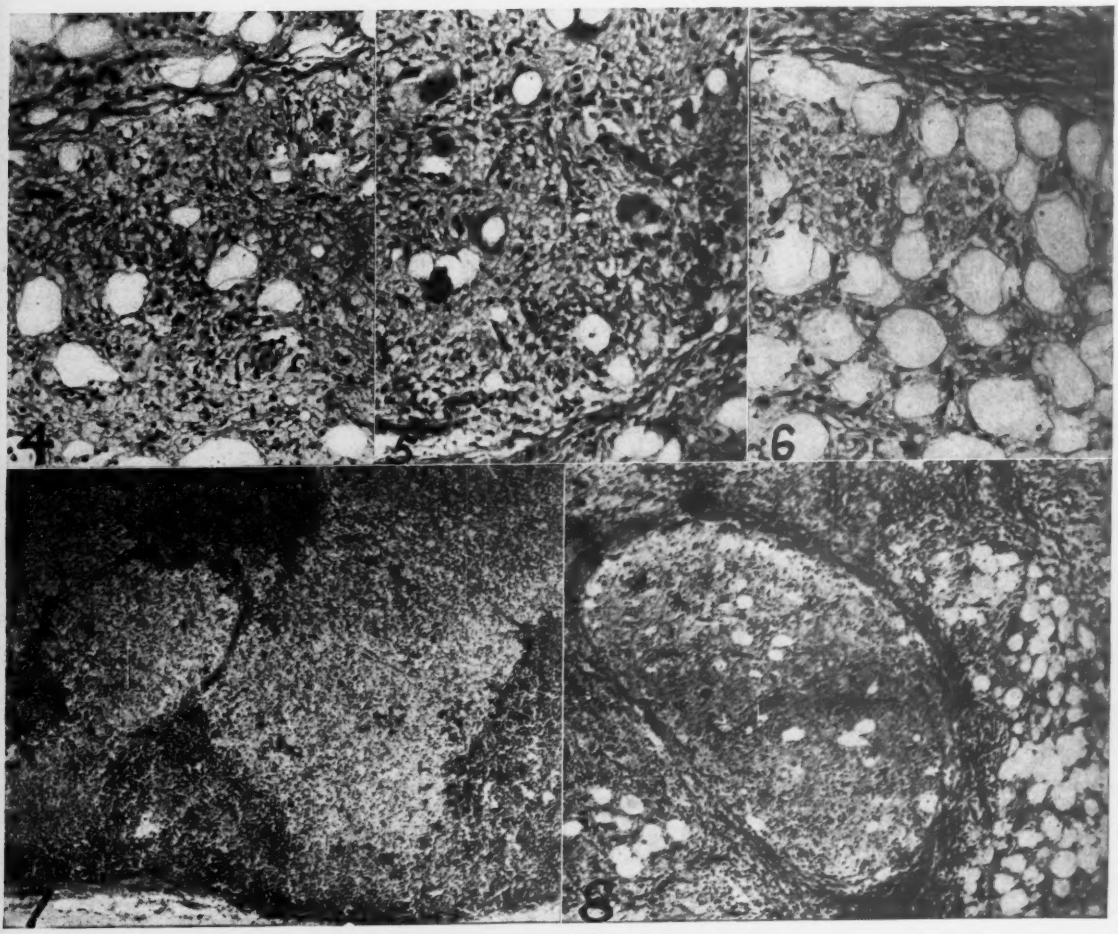


ILLUSTRATION TO THE ARTICLE BY RICHARD FLYNN.

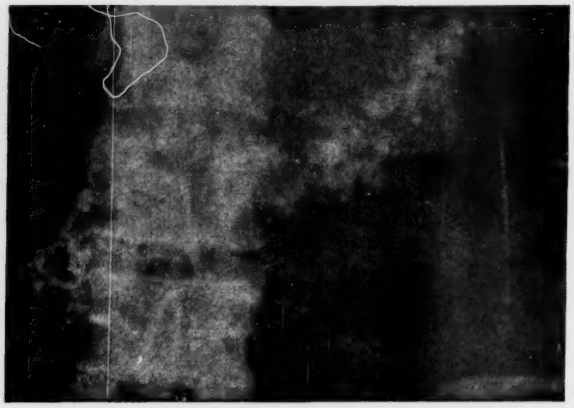


FIGURE I.

ILLUSTRATIONS TO THE ARTICLE BY R. A. MONEY.

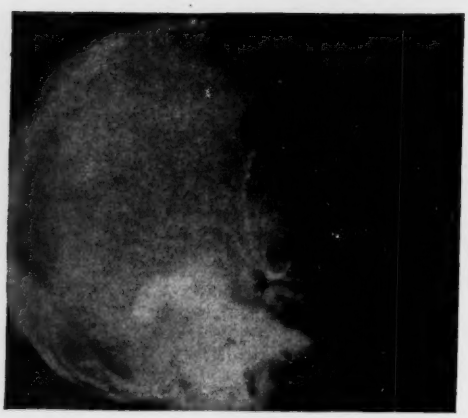


FIGURE I.

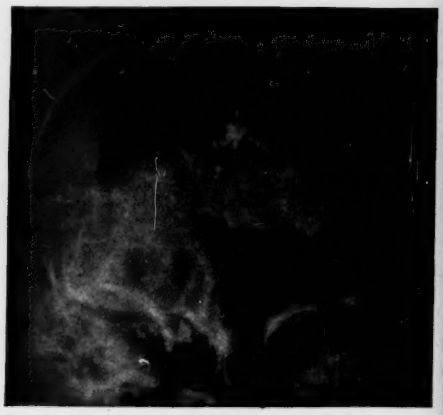


FIGURE II.

ILLUSTRATIONS TO THE ARTICLE BY RICHARD FLYNN AND D. HOWELL.

FIGURE I.

FIGURE II.

FIGURE III.

Report of a Case.

A female infant, aged twenty-four and a half weeks, was admitted to the Melbourne Children's Hospital on March 7, 1950, having been referred by her doctor because of vomiting, loss of weight and pallor for several weeks.

A detailed history, some of which was not obtained until after the child's death, revealed the following story. She was the second child of healthy Australian parents, and her sister had always been well. The pregnancy was normal except for intermittent vomiting in the last six weeks. The mother's antenatal diet was adequate, except that it included only four or five pieces of fresh fruit per week and no oranges. The patient was born after a normal labour, ten days before term. Her birth weight was six pounds (2·72 kilograms). From the third day she was fed entirely on fresh cow's milk formulæ containing 19 or 20 Calories per ounce. No fruit juices were offered, nor any vitamin supplements, until about the twentieth week, when a polyvitamin preparation was ordered. This provided 20 milligrammes of vitamin *C per diem*; also vitamins *A* and *D*, thiamine and riboflavine, but no folic acid. In the twenty-second week a daily dose of 60 milligrammes of vitamin *C* in tablet form was ordered.

The infant's progress was excellent until the twelfth week of life, when a mild febrile attack caused a transient drop in weight. From the sixteenth week anorexia was present, with pallor and occasional loose, green, slimy stools; and the weight increased by only six ounces in three weeks to reach a maximum of 12 pounds six ounces (5·61 kilograms). In the twenty-second week occurred a mild febrile upper respiratory tract infection with vomiting. From that time the patient's condition showed increasing deterioration, which gathered momentum in the week before her admission to hospital. The main symptoms in this period were anorexia, vomiting, loss of weight, pallor, cough and the passage of some loose, mucousy stools.

The positive findings on admission to hospital were as follows: rectal temperature 100·6° F. (38·1° C.); dyspnœa with grunting respirations; pallor of moderate degree; slight enlargement of cervical lymph glands; enlargement of the liver and of the spleen to two fingers' breadth below the costal margin; stools loose, containing mucus, but not pale; weight ten pounds fifteen and a half ounces (4·98 kilograms). The remainder of the examination, including microscopic investigation of the urine, yielded negative findings.

The results of pathological investigations are shown in the following summary.

Blood counts:	March 7.	March 14.
Erythrocytes (per cubic millimetre) ..	1,190,000	3,030,000
Hæmoglobin value (grammes *per centum*)	4·4	7·8
Colour index	1·25	0·95
Reticulocytes	2%	2%
Leucocytes (per cubic millimetre) ..	15,300	8,000
Neutrophile cells (per cubic millimetre)	6,100	1,760
Lymphocytes (per cubic millimetre) ..	8,100	6,020
Platelets (per cubic millimetre) ..	120,000	Scanty

Blood film findings: Macrocytosis, anisocytosis; nucleated red cells, 9 per 100 leucocytes, mostly of Ehrlich megaloblast series.

Marrow film findings: Active megaloblastic erythropoiesis; macropolycytes.

Serum iron content (milligrammes per 100 millilitres): 0·31 (normal value, 0·6 to 0·22).

Serum bilirubin content: Slightly raised.

Investigations yielding normal or negative results: Coombs's test; urinary urobilinogen estimation; examination for occult blood; serum protein estimation; blood Wassermann and Kahn tests; culture of blood and of fæces (twice); tuberculin test.

The blood picture on admission was that of a hyperchromic macrocytic anæmia of severe grade, with thrombocytopenia, and the blood films showed some nucleated red cells of the Ehrlich megaloblast type. A bone marrow puncture served to exclude leuchæmia, and showed the following picture (A.L.W.): the total nucleated cell count was 80,000 per cubic millimetre; the erythroblasts were increased in number, the majority belonging to the Ehrlich megaloblast series, with numerous mitotic figures; the myeloid and lymphoid series were present in normal numbers, with abnormally large myeloid maturing forms; the megakaryocytes were apparently diminished in number; the myeloid-erythroblast ratio was 0·5 : 1 (the normal ratio is from 1·5 : 1 to 6 : 1). Thus the myelogram (Figures I and II) was typical of megaloblastic anæmia. The levels of iron and bilirubin in the serum were raised, presumably owing to increased hæmolysis, which is common in cases of severe megaloblastic anæmia.

Treatment was commenced with penicillin 50,000 units every six hours, followed by a transfusion of ten ounces (280 millilitres) of blood. For several days there was considerable clinical improvement with vomiting only occasionally, but there was a smouldering pyrexia up to 100·8° F. (38·2° C.), and the stools increased in number to four to seven *per diem*, being greenish-yellow, with curds and mucus. Seven days after her admission to hospital, the infant's condition was again deteriorating; she had a rectal temperature of 102° F. (38·9° C.), tachycardia, dyspnœa, and increasing pancytopenia. Streptomycin was given, 200 milligrammes every eight hours. Folic acid was ordered, but before it had been given the patient collapsed and died with respiratory distress during a second transfusion, after five and a half ounces (156 millilitres) of blood had been given in six hours.

At autopsy (A.L.W.) the main positive findings were as follows: bruising at the sites of injections; serous effusions in the pleural cavities, causing partial collapse of both lungs, with congested capillaries and large mononuclear cells in most of the alveoli; generalized injection of the large intestine and of the lymphoid tissue of the small intestine; foci of erythropoiesis in the liver; a moderately enlarged spleen containing collections of erythroblasts in the congested sinusoids. Sections of the heart, stomach, kidneys and adrenal glands were normal.

It was concluded that this patient suffered from megaloblastic anæmia of infancy, of nutritional origin; that she responded only temporarily to symptomatic treatment and died from cardio-respiratory distress due partly to overloading of the circulation during a blood transfusion; and that early administration of folic acid might have led to a complete recovery.

Summary.

1. The condition of megaloblastic anæmia of infancy is described.

2. An outline is given of recent studies on the ætiology, indicating that the condition is nutritional in origin and that the two main factors are deficiency of folic acid and deficiency of vitamin *C*.

3. A typical case is reported, in which death occurred during blood transfusion before specific therapy had been commenced. This case is believed to be the first to have been diagnosed in Australia.

Acknowledgements.

We are indebted to Dr. H. Boyd Graham for permission to publish the case history; to Mr. E. Matthaei, of the University of Melbourne, for the photomicrographs; and to Dr. John Perry for assistance in preparing the manuscript.

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Addendum.

Since the presentation of this paper, May and his colleagues have published further valuable experimental results in support of the views described above on the ætiology of this anæmia (*American Journal of Diseases of Children*, Volume LXXXII, page 282, September, 1951).

Legends to Illustrations.

FIGURE I.—Bone marrow showing three basophilic and three eosinophilic megaloblasts.

FIGURE II.—Bone marrow showing a basophilic megaloblast beside a smaller eosinophilic one, and above, a giant "stab" form metamyelocyte.

Reports of Cases.

WEBER-CHRISTIAN SYNDROME: REPORT OF A CASE.

By J. H. W. BIRRELL,
From the Clinical Research Unit, Alfred Hospital, Melbourne.

FIRST described fully by Weber in 1925 as "relapsing non-suppurative nodular panniculitis", the Weber-Christian syndrome is apparently very rare, only 36 cases having been found in the available literature to the end of 1950. This case is reported since up to the present time there is no record of a case in Australia.

Christian in 1928 added the word "febrile" to the name, which thus became "relapsing febrile non-suppurative nodular panniculitis", a cumbersome but nevertheless descriptive title. Weber, though he first named the disease, considered his case similar to ones described by Pfeifer (1892) and by Gilchrist and Ketron (1916).

Several typical cases were described in the next few years, and Bailey (1937) collected five cases at the Mayo Clinic. This series included a gross example with high fever; biopsy of a nodule showed the typical picture of the disease. Death occurred in this case.

Miller and Kritzler in 1943 reviewed the literature and collected 26 cases. They added one which is significant, in that it was the first example of the disease in its acute phase to come to autopsy. However, the only lesions demonstrated were focal subcutaneous necrosis and minimal hepatic changes.

Spain and Foley in 1944 described the autopsy findings in another case. There were necrotic areas in the omental mesenteric and pretracheal fat as well as in the *panniculus adiposus*. Examination of the kidneys incidentally revealed the terminal stage of glomerulo-nephritis.

Ungar in 1946 recorded a case in which death was due to "primary" suppurative peritonitis, the infecting organism being a *Streptococcus hæmolyticus* which was also isolated from infected tonsils. At autopsy mild inflammatory changes were seen in the adipose tissue of liver and kidneys. Ungar histologically examined adipose tissue from many different regions, using a battery of stains. From a study of this material and of earlier biopsy material he identified three stages of the inflammatory lesion, thus: (i) suppurative inflammation, (ii) granuloma-like change, (iii) healed inflammation with residual changes. These changes were not limited to the *panniculus adiposus*, but were also present to a varying extent in the tissues of the abdomen and thorax.

Mostofi and Engleman (1947) reported another fatal case in which there was widespread general involvement of adipose tissue. Lesions of the adipose tissue were present in the subcutaneous, epicardial, peripancreatic, periadrenal, perirenal and mesenteric tissues. Microscopic examination of the lesions revealed varying stages of panniculitis and subsequent fibrosis, similar to that shown in Ungar's case. Cirrhosis of the liver was present in this patient.

Recently Rubin and Bland (1949) have described two cases which fulfil the criteria of the disease. One patient developed recurrent episodes of joint pain limited to hip, knee and ankle joints. This symptom appeared at different times, both independently of and in association with the appearance of subcutaneous nodules, and actually led to a mistaken diagnosis of rheumatic fever.

Johnson and Plice (1949) reviewed the literature and added another case, the thirty-sixth. This patient developed a very large number of nodules, as well as enlarged lymph nodes in both groins and axillæ. There was also a reversal of the serum albumin-globulin ratio in this patient. Biopsy showed the typical picture.

Clinical Record.

M.C., aged thirty-seven years, a male Maltese, resident in Australia for two years, was first admitted to the Clinical Research Unit of the Alfred Hospital on June 19, 1951, complaining of numerous lumps on his arms, thighs and abdomen. Four months prior to his admission to hospital he had noticed some lumps on his thighs and elbows; he counted about 18 in all. They were not painful and stayed for only two weeks, after which he ceased to observe them. He did not go to a doctor, as there was no constitutional disturbance. Eighteen days before his admission to hospital he noticed the lumps again, in greater numbers and associated with fever (101° F. the highest temperature recorded) and a frontal headache, which was not severe and was rapidly relieved by aspirin. The lumps had not perturbed him unduly, though some on his thighs had been sore six days before his admission to hospital. Over the last few months he had occasionally felt very tired at night. He had had scabies in Malta during 1945, but admitted to no serious illnesses in his life. His present occupation is that of a poultry dresser, but previously he had been working as a labourer. In Malta he was a driver-mechanic.

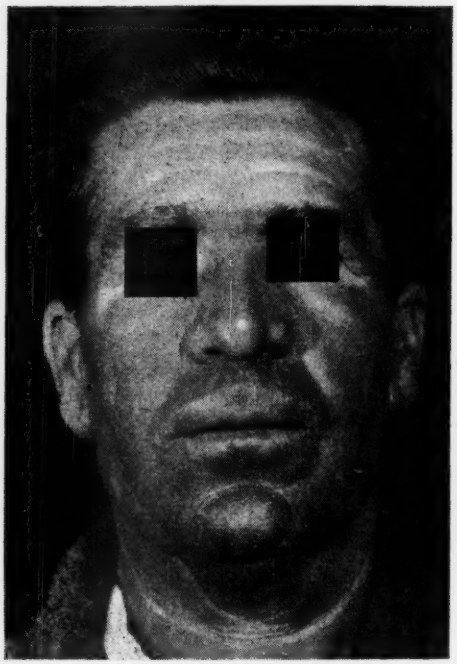

FIGURE I.
Photograph of patient showing coarse facies.

On examination he was found to be a well-built middle-aged man. From comparison with some old photographs in his possession his face appeared to have coarsened in appearance owing to the presence of nodules on his forehead (Figure I). Examination of the heart, lungs and central nervous system revealed no abnormality. In the abdomen the liver was just palpable, but the spleen could not be felt. Enlarged rubbery lymph nodes were present in both groins and axillæ, but there were none in the neck. No œdema was present.

Scattered subcutaneous nodules were present in the following sites: (i) the forehead; (ii) both arms and forearms, maximal in number on the flexor and lateral aspects (Figure II); (iii) the anterior chest wall (sparsely); (iv) the abdomen, with a concentration round the umbilicus; (v) the back, mainly in the lumbar regions and

on the buttocks; (vi) the inner aspect of both thighs, with a few scattered nodules on the legs. The nodules were firm, but not tender or painful, and varied in diameter from a few millimetres to three or four centimetres. The average diameter was about 1·5 centimetres. The nodules in the main were not attached to skin, but in several instances, when the nodule was large, it was attached to skin which was reddened and shiny. These larger nodules were present on the outer surfaces of both elbows. An increase in pigmentation was noted in the skin over many

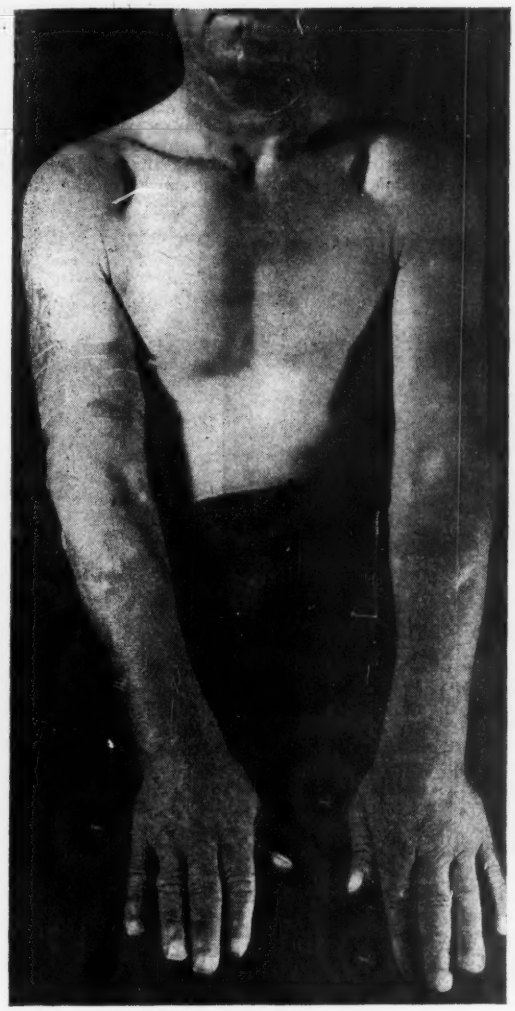

FIGURE II.
Photograph of patient showing concentration of nodules at elbows.

of the nodules, particularly in the thighs (Figure III). The skin over his legs was dry and scaly, and there was a slight crack at the right angle of his mouth.

The following results were obtained from laboratory examinations. The hæmoglobin value was 11·9 grammes per 100 millilitres; the red blood cells numbered 4,000,000 per cubic millimetre, and the white blood cells numbered 13,000 per cubic millimetre, 7800 being polymorphonuclear cells and 4900 lymphocytes. The blood sedimentation rate was 17 millimetres in one hour (Wintrobe). The blood did not react to the Wassermann test. Serum agglutination tests for *Brucella abortus* and *B. melitensis* gave negative results. The Mantoux skin test produced a negative result with old tuberculin, both bovine and human, at a dilution of 1:1000. The urinary diastase level was two units. The serum protein content was 7·6 grammes per 100 millilitres of blood (4·3 grammes of albumin and 3·3 grammes of globulin). The prothrombin concentration was 100%. The serum alkaline phosphatase content was 13 units. The serum bilirubin content was less than 0·25 milligramme per 100 millilitres. The serum cholesterol content was 160 milligrammes per 100 millilitres. The total serum lipid content was 485 milligrammes per 100 millilitres. The serum colloidal gold test produced the following result: "0000000000". The cephalin flocculation test produced a "++++" reaction. The result of the thymol turbidity test was six units. The result of the zinc sulphate precipitation test was 1·6 grammes per 100 millilitres of γ-globulin. The fæcal fat content was 80·5% (unsplit fat).

An electrocardiogram gave normal findings in all leads, and an X-ray film of the chest revealed no abnormality.

The patient's course in hospital was uneventful. His temperature rose to 99·6° F. on several occasions, but the size of the nodules did not alter.

In spite of these results the diagnosis remained uncertain; leprosy, sarcoidosis, brucellosis and *erythema nodosum* as well as Weber-Christian disease were all considered. As it was obviously impossible to confirm the diagnosis without biopsy, this was carried out. A nodule on the inner aspect of the upper part of the right arm was removed together with the overlying skin. At the same time one of the enlarged lymph glands was removed from the right axilla.

The pathologist reported on the histological sections as follows. The epidermis of the skin nodule appeared normal. The fat cells in the deeper layer of the dermis were largely replaced by cells with abundant foamy cytoplasm and small central nuclei (Figure IV). There were a few scattered foreign body giant cells (Figure V), and there was diffuse infiltration by a mixture of inflammatory cells, polymorphonuclear cells and small round cells being present in about equal numbers. There was a similar, though less pronounced, inflammatory infiltration of the fibrous septa between the fatty lobules (Figure VI). Endarteritis was present in small arteries and arterioles in the dermis.

The lymph node contained "active" but otherwise normal follicles. Between the follicles the medullary tissue was packed with foamy cells similar to those in the dermis (Figure VII).

The patient was discharged from hospital on July 2, 1951, feeling well, but with his nodules unchanged in size. Examination on July 20 revealed that both his spleen and his liver were palpable to two fingers' breadth below the costal margin. The cephalin flocculation test result was still "++++" and the thymol turbidity test result six units.

He was readmitted to hospital on August 6 and treated with 10 milligrammes of ACTH intravenously every six hours to a total of 160 milligrammes. There was a measurable decrease in the size of the nodules whilst he was receiving the ACTH, but this response ceased when ACTH became unavailable.

Since his last discharge from hospital he has been subjectively well and working. The nodules on the thighs and trunk are less prominent, those on his face more so. Pigmentation over the nodules has increased somewhat, whilst the enlargement of his lymph nodes has subsided.

Commentary.

This case, the thirty-seventh to be described, is a typical example of the Weber-Christian syndrome conforming to both clinical and pathological criteria in all respects.

The syndrome is characterized by recurring bouts of fever coincident with the appearance of subcutaneous nodules, varying in number and size, which may be painless or tender. The most common sites for these are the arms and thighs, usually on the flexor aspects, the abdomen and back, and less commonly the legs and face.

The underlying pathological change, panniculitis with fat necrosis, results eventually in localized atrophy of the *panniculus adiposus*, leaving small saucer-shaped areas of skin, deep to which the adipose tissue has disappeared. These areas pucker slightly as they fibrose to deeper structures, increased pigmentation being often seen in the skin. I can find no record in the literature of a lymph gland being removed in this disease, but the appearances are as would be expected—namely, lipoid-laden macrophages scattered amongst the follicles.

From the recorded cases the disease would appear to be more common in females than in males, the sex ratio being 25 females to 12 males. The age group affected is from eight to fifty-six years.

The course of the disease seems to be relatively benign, because, although six of the 36 cases described have ended fatally, in only a few instances can death be attributed directly to the disease. Notwithstanding this observation, during relapses a patient may be quite ill, with high fever, malaise and loss of weight. The duration of the disease is indefinite.

FIGURE III.
Photograph of patient's thigh on its medial aspect showing up the increased skin pigmentation.

In Ungar's case the disease ran a course lasting nine months, during which period the patient had three episodes of the disease, death occurring during the third episode. Her general symptoms during each relapse were those of weakness and inability to work, headache and pains in her joints. She also had abdominal pain and diarrhœa. A feature was that both Wassermann and Kahn tests produced positive results despite lack of any other evidence of syphilis both *ante mortem* and *post mortem*.

The ætiology is unknown. Many hypotheses have been advanced—for example, septic foci, virus infection, bacterial allergy and allergy to iodides. Repeated attempts at blood culture have been unsuccessful, and no bacteria have been isolated from the lesions. The use of iodides has preceded the onset of the disease in a few instances (Bailey, 1937), but there was no such history in this case.

The histological picture is one of destruction of fatty and to a lesser extent fibrous tissue, terminating in scar-like formation.

The disease presents certain analogies to generalized rheumatoid disease, now being more widely recognized (Ellman and Ball, 1949; Christie, 1950). Thus the Weber-Christian disease can be generalized as in Spain and Foley's case (1946) and Ungar's case (1946). Another similarity is in the rise of the γ-globulin fraction of the serum proteins. However, this fraction is increased in many disorders, and its diagnostic value is certainly limited. It does rise in such diseases as rheumatic fever and rheumatoid arthritis, which are classified in the general group of collagenoses. The electrophoretic method for the estimation of γ-globulin was not available, but the cephalin flocculation, thymol turbidity and zinc sulphate precipitation tests indicate that there was a significant increase in the γ-globulin fraction. It is also perhaps to be noted that joint pains are occasionally present, and in one case (Rubin and Bland, 1949) were severe enough to give rise to a mistaken diagnosis of rheumatic fever.

As ACTH has been shown to have a beneficial action in these conditions, it was given to this patient in sufficient quantity to show that the size of the nodules was decreased, but there was not sufficient of the drug available to continue maintenance therapy.

Liver function tests have not been mentioned in the recorded cases of this disease, so that we do not know whether the alteration in γ-globulin observed is a constant finding in this disease. The serum albumin-globulin ratio was lowered in this case, but in others it has been reversed.

Treatment.

It is extremely difficult to evaluate the result of any given therapy in this disease because of its relapsing nature. Thus many therapeutic agents have been tried, including penicillin, streptomycin and the sulphonamides, but with no apparent effect on the course of the disease. This is perhaps understandable when one realizes that no bacterial agent has been isolated as an ætiological factor. Placing the disease in a group with the collagenoses makes the position with regard to the results of therapy clearer still. Hence, in view of the affinity of this disease with the collagenoses and the short-term diminution in size of the nodules produced in this case by treatment with ACTH, it is possible that further success can be expected when the drug is readily available.

Summary.

1. A case of the Weber-Christian syndrome is described, proven by biopsy of a nodule and a lymph node from its drainage area.

2. The γ-globulin fraction of the plasma protein was found to be raised.

3. Ætiology, classification and treatment are discussed briefly, and it is suggested that ACTH may be worth further trial.

Acknowledgements.

I wish to thank the Director of the Clinical Research Unit, Dr. T. E. Lowe, for his permission to record this case and for his helpful criticism and advice in its preparation. I am indebted to Dr. A. V. Jackson for the report on the histological sections, to Miss M. Bick for the biochemical estimations, and to Mr. Tom O'Connor for the photographs of the patient.

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Legends to Illustrations.

FIGURE IV.—Section showing replacement of fat cells by cells with foamy cytoplasm and small central nuclei (× 150).

FIGURE V.—Section showing scattered foreign body giant cells amongst necrotic fatty tissue (× 150).

FIGURE VI.—Section showing inflammatory infiltration of a fibrous septum and a fatty lobule in the process of disintegration (× 150).

FIGURE VII.—Section of lymph gland showing lipoid laden macrophages between the follicles (× 50).

FIGURE VIII.—Section showing fatty lobule almost completely replaced by inflammatory cells and lipoid laden cells, whilst the lobule on the left shows an earlier stage of the same process (× 50).

A CASE OF PANCREATIC CALCIFICATION.

By RICHARD FLYNN,
Sydney.

E.W., a female patient, aged forty-eight years, was referred to me by Dr. D. L. Howell because of severe epigastric pain. The pain was so severe that she felt compelled to take drugs for its relief. She also complained of severe diarrhœa and of the fact that her whole abdomen was so sore that she could not bear to touch it. Her present husband was her third, and she had had no children. Her second husband was a medical practitioner, from whom she had learnt something of drugs. She had had several operations, which included removal of a dermoid cyst of her right ovary, hysterectomy, appendicectomy and excision of ten inches of small bowel. She was thin and had become, on account of her constant pain and ill health, a drug addict and was a frequent partaker of alcohol and a heavy smoker.

Physical examination of the patient disclosed nothing to account for her symptoms, so the help of the radiologist was sought from the films which the patient had brought along with her. X-ray appearances of her stomach, duodenum and gall-bladder were all reported as normal, but a plain X-ray film of her abdomen showed a very nice example of chronic pancreatitis with calcification (Figure I). Thus the truth of the statement "the clinical recognition of pancreatic calcification is dependent upon the röntgenologic diagnosis" was realized. A glucose tolerance curve was normal. I offered her and her family the relief which might follow excision of the nerves to the pancreas, which they and she readily accepted. It was now "up to" me, and it had to be decided whether the operation was to be a vagotomy, a thoraco-lumbar sympathectomy, both, or even bilateral excision of all four structures. From a consideration of the literature I decided to see the effect of a right-sided Smithwick operation. This was performed on March 30, 1951. The patient enjoyed immediate relief from her chronic pain, and when she reported back to me on July 25, 1951, she had gained eleven pounds in weight. She was eating well and the old pain had gone. Most important, she had given up entirely her injections and tablets and took no medicine at all.

She reported back again on December 28, 1951, complaining of diarrhœa and pain in her scar. The pain was relieved by an injection of alcohol into the intercostal nerve and pancreatic tablets have relieved her diarrhœa.

A CASE OF MENINGIOMA OF THE OLFACTORY GROOVE WITH MENTAL CHANGES.[1]

By R. A. MONEY,
Department of Neurosurgery, Royal Prince Alfred Hospital, Sydney.

W.D., A MALE PATIENT, aged fifty-four years, had become irritable and cranky in November, 1949. He always seemed to be tired, and he had lost his job in June, 1950, owing to incapacity for work. He never seemed to realize the seriousness of his condition or his lack of interest in affairs. He had become a heavy drinker of alcohol and at times was abusive and violent and used obscene language, which had not been his custom previously. He was impotent and frequently was incontinent of urine, though neither of these facts worried him. He stoutly denied his wife's accusations concerning his habits, and maintained that there was nothing wrong with him. In November, 1950, he was admitted to Broughton Hall, where it was found that he was almost completely blind in the right eye and had only very poor vision in the left eye. The abdominal reflexes were absent, but otherwise no abnormalities were found in his central nervous system. Lumbar puncture was performed; the cerebro-spinal fluid was found to contain 400 milligrammes *per centum* of protein, and the Lange curve was represented by the figures "5554310000".

In view of these findings he was transferred to the Royal Prince Alfred Hospital in the care of a physician, where once again the cerebro-spinal fluid was found to contain a greatly increased amount of protein, but the pressure was normal. The visual acuity in the right eye was less than 6/60 and in the left eye 6/24. There was a degree of optic atrophy in both disks. An electroencephalographic examination suggested a right frontal neoplasm extending over to the left side and backwards.

The patient was then examined in consultation and further investigations by pneumoencephalography and arteriography were carried out (see Figures I and II). These procedures revealed the presence of a large space-occupying lesion in both frontal regions, under the frontal lobes and arising from the olfactory grooves. First-stage bilateral frontal craniotomy was performed on February 13, 1951, when the presence of a solid tumour underneath both frontal lobes was confirmed. A biopsy was made from this tumour through a needle puncture, and this showed that it was a meningioma. The second stage operation was performed on February 26, when a large amount of tissue from a huge bilateral meningioma arising from the olfactory groove was removed; but owing to severe hæmorrhage the complete removal could not be carried out.

After this procedure the patient's condition improved greatly, especially with regard to his mental state, and he was allowed to go home for a time.

[1] This patient was shown at a clinical meeting of the New South Wales Branch of the British Medical Association, held on May 24, 1951, at the Royal Prince Alfred Hospital.

He was readmitted to hospital on April 9, 1951, and the third-stage operation was performed a few days later. Once again very severe hæmorrhage was encountered during the removal of the remainder of the tumour; but except for a small amount growing along the actual olfactory groove itself on the left side, satisfactory removal was carried out. This operation took nine hours, and the patient received four pints of blood during this time.

Convalescence was interrupted by some continued bleeding from the tumour and by escape of blood-stained cerebro-spinal fluid through the nose; but these complications soon settled down, and when he was discharged from hospital on May 5, 1951, his condition was satisfactory. The visual acuity in his left eye had improved, but there had not been much change in his right eye. His mental condition had almost returned to normal, and were it not for his poor vision he thought he would be able to return to work. His habits were clean and his language was polite.

Legends to Illustrations.

FIGURE I.—Lateral view of an arteriogram taken after the percutaneous injection of "Uriodone" into the right common carotid artery, showing the marked deformity and displacement of the right anterior cerebral vessels by the huge growth. The rounded "shadow" of gas in the deformed and displaced anterior horns after pneumoencephalography can also be seen.

FIGURE II.—Antero-posterior view of arteriogram after pneumoencephalography, showing the deformity and displacement of the ventricles and of the right anterior cerebral artery.

CYSTIC GANGLIONEUROMA.

By RICHARD FLYNN and D. HOWELL,
Royal Prince Alfred Hospital, Sydney.

THE following case record describes the accidental discovery of an apparently benign tumour in a single girl.

Clinical Record.

C.P., a girl aged nineteen years, a clerk, was admitted to the Royal Prince Alfred Hospital suffering from acute bilateral catarrhal *otitis media*. On routine examination of the patient a symptomless abdominal tumour was discovered, and after the cure of her *otitis media* she was transferred to a surgical ward for investigation of this tumour.

The lump had been first noticed three years previously, and the patient thought that it had grown slightly since then. It had not caused any symptoms, either locally or referred to the gastro-intestinal or urinary system. The patient had lost three stone in weight during the last two years.

On examination of the patient the abdominal wall had many striæ over its lower half. In the right hypochondrium and lumbar areas there was a hard, non-tender, circular, regular mass measuring four inches by three inches, not fixed to skin or abdominal wall and slightly movable from side to side, but not movable in a vertical direction. It was resonant to percussion, was sharply limited superiorly, was not attached to the liver and was apparently not connected to the kidney, the lower pole of which could be felt in the right loin posteriorly and laterally to the mass. Vaginal examination showed that the mass was not connected with the pelvic viscera.

Examination of the blood revealed a hæmoglobin value of 11·8 grammes *per centum* and a total leucocyte count of 11,800 per cubic millimetre, 72% of these being polymorphonuclear cells. Microscopic examination of the urine revealed two red blood cells per microscopic field. No organisms were grown on culture. Plain X-ray examination of the abdomen showed the outline of the swelling. The following findings were obtained from an excretion pyelogram (Figure I):

> On the preliminary skiagram the shadow of the psoas muscle on right side is very broadened and the right kidney shadow is not well defined. The left kidney shadow appears normal. Excretion urography outlines the right renal pelvis and calyces well and they are displaced considerably upwards and laterally with very marked lateral displacement of the right ureter by the soft tissue tumour. The X-ray appearances indicate that the tumour is extrinsic to the renal tract and is displacing the right kidney and ureter. There are two or three small faintly calcified shadows within the soft tissue tumour.

The following report was made on X-ray examination after barium enema (Figure II):

> The enema flowed to the caecum without delay and no abnormality was seen in the large bowel. The mass is just medial to the ascending colon and does not appear to be derived from it.

Operation.

At operation, with the patient under ether anæsthesia and postured in the lateral position, the tumour was exposed extraperitoneally by a lateral incision and its relationships were defined. The ureter was postero-lateral and the inferior *vena cava* medial to the tumour, which was encapsulated, thick-walled and cystic. Brown viscous fluid was aspirated, after which the cyst collapsed and was dissected from its firm attachment to the vertebral column and the inferior *vena cava*. This latter was incorporated in its wall for one to two inches opposite the third lumbar vertebra, and troublesome bleeding was encountered, necessitating ligation of the *vena cava*. It was ligated below the renal vein and at the lower end of the cyst attachment, the cyst being then more readily removed. No enlarged glands were palpable. The wound was closed in layers in the usual manner.

In the immediate post-operative period three pints of blood were given through a needle inserted in the right long saphenous vein at the ankle. Resultant phlebitis in this vein caused œdema of the right foot and ankle, but no œdema developed on the left side, and at the patient's discharge from hospital three weeks later there was no evidence of the development of a cutaneous collateral circulation.

Pathological Report.

The following report was made on the tumour:

> Biopsy AE1735.—The specimen consists of the wall of a cyst which has been opened out and fixed in the flattened position. It is oval in shape and measures eight centimetres in longest axis and six centimetres broad. The tissue varies between 0·5 centimetre and 1·2 centimetres in thickness. The lining has a smooth surface.
>
> Microscopically the cyst wall has the structure of a ganglioneuroma, there being groups of well-developed ganglionic neurones present and bundles of neurofibrils between them.

Comment.

Since the first case was reported in 1870, primary tumours of the sympathetic nervous system have been recorded in all the sites where sympathetic tissue is known to be present; the individual tumours vary histologically between the two extremes of the malignant undifferentiated neuroblastomata and the benign fully differentiated ganglioneuromata. In the former and also in "intermediate types" degenerative changes would be expected and are commonly found (Wahl, 1938), but in the latter type true cystic tumours are quite rare (Stout, 1947), although special stains will show degeneration in isolated groups of nerve fibres (Willis, 1949).

In this case sections from separate areas of the wall failed to show evidence of cellular immaturity or proliferation. This, together with the clinical history, age of onset *et cetera* and findings at operation, confirms the view that the tumour was a fully differentiated cystic ganglioneuroma.

Acknowledgement.

Thanks are due to Dr. V. J. McGovern for his description of the histological features of the tumour.

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Legend to Illustration.

FIGURE III.—Photomicrograph showing aggregations of ganglion cells. (Hæmatoxlylin and eosin stain, × 200.)

Reviews.

A YEAR BOOK OF NEUROLOGY AND PSYCHIATRY.

THE separate section on neurosurgery has been dropped from "The 1951 Year Book of Neurology and Psychiatry".[1] Material that would previously have been grouped into this section is included, with advantage, in its natural place in one or other of the two main sections. With the aid of the index the neurosurgeon should have no difficulty in finding what specially interests him. The section on neurology opens with a short introduction, in which the editor, R. P. Mackay summarizes current advances. Then follow chapters on physiology, pathology, trauma, infectious diseases, vascular disturbances, degenerative diseases, tumours of the brain, tumours of the spinal cord, epilepsies, cranial and spinal nerves, and diagnostic and therapeutic methods. Infectious diseases considered include meningitis, encephalomyelitis, anterior poliomyelitis, neurosyphilis, and infestations and fungous infections. The degenerative diseases are neurodegenerative diseases, multiple sclerosis, deficiency states, myopathies and *myasthenia gravis*. In the subsection on vascular disturbances an important and informative group of articles on developmental vascular anomalies has been summarized.

The editor of the psychiatry section, N. D. C. Lewis, thus defines his principle of selection in view of the large volume of important literature: " . . . we have attempted to select a few substantial contributions from the periodical literature that are of interest in terms of opening up an area or topic for future research or for practical application in everyday work and to present a sufficient amount of description to enable the reader to decide whether he wants to consult the original article or not." On this basis he fits into 200 pages a wide selection of material on general topics, child psychiatry, schizophrenia, affective disorders and miscellaneous reactions, organic disorders and toxic reactions, psychoneuroses and psychosomatic disorders, and therapy. The whole volume should interest many general medical readers apart from the specialists concerned.

ABDOMINAL DIAGNOSIS.

"AN INTRODUCTION TO ABDOMINAL DIAGNOSIS" by Alan E. Lee is a praiseworthy attempt to fulfil a very real need.[2] In some ways the training of students in hospital fails to meet the needs of practice. The patients are selected and segregated in specialist departments. The patient with gross physical signs receives most interest and attention. Skiagrams showing striking abnormalities and biochemical tests with dramatic positive findings often dominate the scene. But in practice it is the skilled painstaking history and clinical examination which count, and even in hospital, these should provide a control by means of which the validity of the ancillary findings is tested. Lee has realized this. If the student could acquire the approach to diagnosis described in this book it would strengthen clinical acumen and judgement. It would do more. Many of the underlying mechanisms of abdominal pain are in dispute. And, if the student's interest is awakened, much of the routine of practice will be transformed into an exciting personal research. If the problems raised by Lee were dealt with in the systematic lectures in physiology and medicine and surgery, the student would receive something much more useful for his life work than much of the knowledge of biochemistry, of the minutiæ of physiology and anatomy, and of rare diseases.

As for the disputed questions, some readers will believe that Lee has at times taken his stand on the wrong side and that the fundamental data of some of his hypotheses are wrong. The stress upon the importance of abdominal wall segmental neuralgias is not convincing; neither is the significance of the mobile ascending colon. It is difficult to know why this (apart from volvulus) should be more harmful than the mobility of the ileum and transverse colon. Few surgeons would belittle the importance of the appendix and gall-bladder, as Lee has done, when there is tenderness over McBurney's point and beneath the right costal margin (Murphy, by the way, described a sign, not a point). He describes acute inflammation of the appendix as something which may be treated conservatively or, if by operation, as "a matter of expedience". There is danger in this, unless some means are provided whereby the student can clearly distinguish between acute inflammation and acute obstruction of the appendix. Nevertheless, apart from these details, the book should indeed be welcomed. Not least among its virtues is its recognition of the close association between mind and body in the production of symptoms. Its conservative attitude would discourage the all-too-prevalent laparotomy for minor anatomical abnormalities and dubious local lesions in patients with anxieties and personality disorders.

PATTERNS OF SEXUAL BEHAVIOUR.

"PATTERNS OF SEXUAL BEHAVIOUR", as its title indicates, is an objective survey of the sexual behaviour of human beings and lower animals, particularly the primates.[1] An idea of its scope may perhaps best be gained by a survey of the chapter titles, some of which are as follows: "The Nature of Coitus", "Types of Sexual Stimulation", "Circumstances for Coitus", "Attracting a Sex Partner", "Sexual Partnerships", "Homosexual Behaviour", "Relations Between Different Species", "Self Stimulation", "Feminine Fertility Cycles", "Other Physiological Factors in Sex Behaviour", and finally, "Human Sexual Behaviour in Perspective".

One author has devoted himself particularly to the studies in subhuman animals, namely, Frank A. Beach, Professor of Psychology in Yale University. The other author is Associate Professor of Anthropology at Yale and has presumably been responsible particularly for the studies of the above subjects in various human societies. As far as possible the range has been very extensive and covers 190 societies of all types of human beings scattered throughout the world, while the book written by Kinsey, Pomeroy and Martin has served as a background for what may be called "Americans" living in the United States.

One of the interesting conclusions is that in the higher primates and man sexual behaviour becomes more varied and less stereotyped, and thus less under the routine control as it were, of the hormones. To quote the authors: "As the cortex has grown in size and complexity its control over behaviour has increased. . . . Sexual impulses and responses are no exception to this generalisation. . . . We suggest that the evolutionary decrease in the importance of gonadal hormones for sexual behaviour reflects a compensatory increase in the degree of control exerted over such activities by the cortex of the brain."

No attempt is made to discuss the morality or otherwise of any particular form of behaviour, the description being purely objective. Much of the book must necessarily be more for reference than for consecutive reading, being simply a record of any particular form of behaviour in each of the societies surveyed. This makes certain parts of the book somewhat tedious though none the less valuable for record purposes. An interesting feature already referred to is the great variability in sexual behaviour in different human societies.

[1] "The 1951 Year Book of Neurology and Psychiatry (November, 1950-October, 1951)"; Neurology, edited by Roland P. Mackay, M.D.; Psychiatry, edited by Nolan D. C. Lewis, M.D.; 1952. Chicago: The Year Book Publishers, Incorporated. 8″ × 5¼″, pp. 556, with 109 illustrations. Price: $5.50.

[2] "An Introduction to Abdominal Diagnosis: A Handbook for Students and Practitioners", by Alan E. Lee, M.D. (Melbourne), F.R.C.S. (England), F.R.A.C.S.; 1951. Sydney: Australasian Medical Publishing Company, Limited. 10″ × 6½″, pp. 176, with three text figures. Price: 32s. 6d.

[1] "Patterns of Sexual Behavior", by Clellan S. Ford, Ph.D., and Frank A. Beach, Ph.D., with an introduction by F. A. E. Crew, M.D., D.Sc., Ph.D., F.R.S.; 1952. London: Eyre and Spottiswoode. 9″ × 6″, pp. 314, with 16 text figures. Price: 22s. 6d.

In conclusion, the authors state that it is most regrettable that an area of inquiry having such fundamental importance in both its practical and its theoretical aspects should have been so inadequately studied and so incompletely understood.

This book must form a background for anyone studying problems of human sexual behaviour.

CLINICAL NEUROLOGY.

THE issue of a second edition of Sir Gordon Holmes's "Introduction to Clinical Neurology" within six years of a reprint is an indication that the book meets the needs of those who wish to work on a basis of sound principles in neurology.[1]

To quote from the preface: "It is not its aim to describe or deal with injuries and diseases as such, but to discuss the nature and significance of symptoms and abnormal signs."

Senior students and graduates who go to the trouble of taking this book as a guide in the course of their training in neurology and who learn to apply the author's teaching will at least attain the first and most important stage in the practice of neurology, namely, the ability to determine the site and nature of the pathological process. Details concerning ætiology, ancillary methods of diagnosis, prognosis and treatment must be sought elsewhere.

While there are no great changes in this edition various passages have been rewritten and additions made. Amongst several new figures, photographs and diagrams of cross sections of the medulla and mid-brain will be found most useful for reference. In the chapter on the motor system mention is now made of areas 4 and 6 and attention is drawn to symptoms of slowly progressive lesions as well as to those of more rapid development. Several short paragraphs have been added to the chapter on muscle tone and coordination of movements, including one concerning the incoordination which accompanies spasticity. The section on involuntary movements has also been amplified. The hypothalamus which received brief mention in the first edition is now described at greater length, with the addition of a simple diagram. The sections on the visual tracts and the innervation of the bladder have also been expanded.

OPHTHALMOLOGY.

"and still the wonder grew,
That one small head could carry all he knew."
—*Goldsmith.*

THE publication of Volume V of Duke-Elder's "Text-Book of Ophthalmology"[2] follows twenty years after that of Volume I. The author, now the Director of the Ophthalmological Institute in London, has confined himself in this volume to consideration of diseases of the ocular adnexa. There is no falling away from the standard of the previous volumes, and this one must take its place beside them in the library of the ophthalmic surgeon as an invaluable source of reference.

The value of the work is not in the subject matter alone, but in the way in which it is presented. These are not the dry bones of ophthalmology, and one cannot but be grateful to the author who introduces his discussion of cosmetic dermatitis with an allusion to Jezebel's desperate bid to forestall her fate on that day of vengeance when Jehu came to Jezreel.

Developmental anomalies are described in the first one hundred and fifty pages. The next section, a more practical one, deals exhaustively with diseases of the lids. Although the disease is much more rare in England than in this country, carcinoma of the lids is discussed very fully, excision being the treatment preferred.

In the section on diseases of the lachrymal apparatus, the advantages of the modern operation of dacryo-cysto-rhinostomy are indicated. With characteristic reasonableness, Duke-Elder holds the view that an adequately performed excision of the sac still has its merits.

After a full discussion of diseases of the orbit and para-orbital regions, the volume concludes with a brief summary of diseases of the teeth which the author introduces by invoking Saint Lucia, the patron saint of the eyes, and Saint Apollonia, the patron saint of the teeth. It is with apparent reluctance that he seems prepared to abandon the "circumstantial evidence" of the role of dental sepsis in ocular disease.

The volume is another tribute to the scholarship of its author whose unique position in the world of ophthalmology is acknowledged in every country.

[1] "Introduction to Clinical Neurology", by Gordon Holmes, M.D., F.R.S.; Second Edition; 1952. Edinburgh and London: E. and S. Livingstone, Limited. 10" × 6½", pp. 196, with 43 text figures. Price: 12s. 6d.

[2] "Text-Book of Ophthalmology", by Stewart Duke-Elder, K.C.V.O., M.A., LL.D., D.Sc. (St. And.), Ph.D. (London), M.D., F.R.C.S., Hon. D.Sc. (Northwestern), D.M. (Utrecht), F.R.C.S. (Edinburgh), F.A.C.S.; Volume V: The Ocular Adnexa; 1952. London: Henry Kimpton. 10" × 7", pp. 1114, with 1181 illustrations, including 32 in colour. Price: 90s.

Books Received.

[The mention of a book in this column does not imply that no review will appear in a subsequent issue.]

"Accelerated Conduction: The Wolff-Parkinson-White Syndrome and Related Conditions", by Myron Prinzmetal, M.D., Rexford Kennamer, M.D., Eliot Corday, M.D., John A. Osborne, M.D., Joshua Fields, M.D., and L. Allen Smith, M.D.; 1952. New York: Grune and Stratton. 9" × 6", pp. 118, with 48 illustrations, one plate in colour. Price: $4.00.

Report of an experimental investigation.

"Theory and Practice of Nursing", by M. A. Gullan; Sixth Edition; 1952. London: H. K. Lewis and Company, Limited. 9" × 6", pp. 254, with nine illustrations. Price: 18s.

Summarizes the instruction given to nurses training in the Nightingale School of Saint Thomas's Hospital, London.

"Diseases of the Nervous System: Described for Practitioners and Students", by F. M. R. Walshe, M.D., D.Sc., F.R.S.; Seventh Edition; 1951. Edinburgh and London: E. and S. Livingstone, Limited. 9½" × 6½", pp. 382, with 63 illustrations. Price: 24s.

The first edition was published in 1940.

"William Smellie: The Master of British Midwifery", by R. W. Johnstone, C.B.E., M.A., M.D., Hon. LL.D.; 1952. Edinburgh and London: E. and S. Livingstone, Limited. 9" × 6½", pp. 148, with 30 illustrations. Price: 20s.

Written so that the story of the life of William Smellie may be easily accessible to obstetricians.

"Skin Therapeutics: Prescription and Preparation (Materia Medica Dermatologica)", by M. K. Polano, with an introduction by Clarence S. Livingood; 1952. Amsterdam: Elsevier Publishing Company. 9½" × 6½", pp. 290. Price: 37s. 6d.

Devoted entirely to the local treatment of skin diseases.

"The Tissues of the Body: An Introduction to the Study of Anatomy", by W. E. Le Gros Clark, F.R.S.; Third Edition; 1952. Oxford: The Clarendon Press. Melbourne: Oxford University Press. 9½" × 6½", pp. 418, with 124 illustrations. Price: 55s. 6d.

The first edition was published in 1939.

"Tests for Colour-Blindness", by Shinobu Ishihara, M.D., Dr.Med.Sc.; Tenth Edition; 1951. Nippon Isho Shuppan Company, Limited. London: H. K. Lewis and Company, Limited. 8½" × 6"; 38 plates in colour and "key" in English, French and German. Price: 75s.

Enables the clinician to determine at once the presence of congenital colour-blindness.

"CIBA Foundation Colloquia on Endocrinology: Steroid Hormones and Tumour Growth and Steroid Hormones and Enzymes", edited by G. E. W. Wolstenholme, O.B.E., M.A., M.B., B.Ch., assisted by Margaret P. Cameron, M.A., A.B.L.S.; Volume I; 1952. London: J. and A. Churchill, Limited. 8½" × 5½", pp. 336, with 48 illustrations. Price: 30s.

Contains the report of two "international symposia" held by the Ciba Foundation.

The Medical Journal of Australia

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PREVENTIVE HEALTH EXAMINATIONS IN GEORGIA.

For many years authorities in preventive medicine have been preaching the doctrine of regular health examinations in order that any departure from normal health may be discovered and corrected before disease becomes established or abnormal conditions have become difficult to correct. It is a common-sense procedure which should appeal to every member of the community. Many people, however, have a procrastinating habit—things as they are are good enough and it is boring if not unnecessary to meet trouble half-way. Some perhaps will look at the proposal much in the same way as persons of a certain type (mostly women) regard the making of a will—they think that such a wise precaution will hasten death. It will be admitted that constant reiteration of the dangers or horrors of a disease, cancer, for example, may create a phobia in the minds of unintelligent people. But there is an enormous difference between what amounts to a panic and a reasoned and understanding approach to a subject. It is the latter which authorities in preventive medicine wish to bring about. Already activities of this kind are accepted in connexion with certain conditions or groups of persons. The mass radiological examination of the chest for signs of tuberculosis is a case in point. Many people welcome this form of examination, and in some places provision is made for it in the legal act dealing with tuberculosis. In certain services and industries health examinations before the acceptance of newcomers are required and submitted to without question. At some universities also arrangements are made for the regular examination of students. The medical inspection of school children, as carried out by departmental officers in all the States of the Commonwealth, covers a great number of children. Baby health centres and the supervision of women during the months of pregnancy must not be forgotten in this enumeration. The latter especially shows that the value of safeguarding health is recognized and appreciated. There is in fact a growing awareness among all sections of the community that health is a possession to be prized and that it is only sensible to make sure that one can be classed as healthy. General practitioners report that it is by no means unusual for adults of all ages and apparently in rude health to come to the consulting room asking to have "the rule run over them". It must be understood that in this discussion the reference is to examination only and that such preventive measures as immunization against different diseases are excluded.

From time to time non-medical, and even medical, persons have asked how far the carrying out of regular health examinations can be extended. We all realize that more could be done in most of the spheres of activity that have been mentioned than is done at present. Radiological examination of the chest for the discovery of signs of tuberculosis could, it is argued with reason, be made to include everybody at regular intervals; and we all know that the school medical services are generally short of staff and that the scope of what is done could be extended if staff was increased. Some idea of the extent to which people can be persuaded to seek investigation of their state of health is shown in a report that has recently come from Georgia, United States of America.[1] The report is presented by L. M. Petrie and C. D. Bowdoin, of the Georgia Department of Public Health, and C. J. McLoughlin, of the Department of Medicine, Emory University. During the six years which began in October, 1945, more than one million residents of Georgia have voluntarily submitted to multiple health tests. People were not asked to undergo a medical examination, but to submit themselves to certain laboratory tests. After the tests had been made, a routine report form was sent to every person, and the form, whether the report was favourable or unfavourable, carried the following message: "We wish to make it plain these tests do not in any way take the place of a physical examination by your family physician. We recommend that in the interest of good health you should see your family doctor at least once a year for a complete physical examination." It is stated that large numbers of persons who were previously not supervised have taken heed of this advice and now visit their own medical attendants. At the start of the effort tests were confined to radiological examination of the chest for tuberculosis and serological examinations for syphilis. Before long dental and oral examinations were included as well as hæmoglobin estimations and blood sugar determinations; cardio-vascular conditions were included as well as other chest conditions such as pneumonokoniosis and malignant disease. It is interesting that the million persons tested represent more than 60% of the entire adult population of the areas in which the surveys have been carried out. It is not quite clear from the report how the surveys were financed. Part of the survey (Atlanta survey) was carried out in a densely populated area containing many Negro dwellings. Here the *per capita* cost was about $1.30—this was the most expensive of the series. Since the Atlanta survey was made costs have averaged about one dollar per person, but here the dental examination and the height and weight determinations have been omitted. Petrie and his collaborators state that the possibility of successful surveys

[1] *The Journal of the American Medical Association*, March 22, 1952.

may still be debated, but they insist that in Georgia they are an established fact. They think that their surveys may be only a passing phase which "will lead to the eventual offering of such tests by the local health departments as a routine service to all citizens on a periodic basis, perhaps annually or, in special cases, more frequently".

The first thought on perusal of this report is that Petrie, Bowdoin and McLoughlin have done extremely well and have shown the way to other people in other places. They state that their success would never have been achieved but for the background of many years of understanding and harmony between the practising members of the profession and their professional colleagues in the field of public health. This also is a matter for congratulation—these two branches of the profession in Georgia have achieved something that should be sought in every community in which private medical practice prevails, and this, of course, includes every State in the Commonwealth of Australia. The careful critic may perhaps point out that the emphasis is on laboratory tests rather than on personal examination, and this is an important point. We shall agree that over-emphasis of the laboratory, "the worship of the test tube", is to be deprecated. But as the Georgia workers seem to show, the "man in the street" is attracted by something which he knows is being done. He likes a little fuss and ritual. In Georgia they try to make the examinee follow up his laboratory visit by a special visit to a practising doctor. This should settle any doubts about the ascendancy of the laboratory. In Georgia they have each unit "geared" in such a way that from 80 to 100 persons may be tested in an hour. It seems well worth while too that in eighteen months some 300,000 persons have been given blood tests for anæmia and for abnormalities of carbohydrate metabolism. A fact of the utmost importance must not be overlooked. It is that testing of this kind with the subsequent follow-up by private doctors does promote harmony between these doctors and public health medical officers—a form of cooperation which is essential to the success of any public health effort. This Georgian report should be studied by all practitioners of medicine—many points in it have not been mentioned. Free discussion on the subject may make possible an extension of regular voluntary health examinations in this country.

Current Comment.

TRANSPORT OF THE SICK BY AIR.

THE later years of the war greatly advanced the transportation of the sick and wounded by air, and fresh information was gained concerning the hazards of air travel by those with certain disabilities. As a generality it may be said that patients who were suffering from circulatory and respiratory affections travelled rather better than had been expected, while others, such as those with excited psychiatric states, often deteriorated in physical condition, owing in part to dehydration. A review has been published of observations made by the United States Air Force Medical Service on 1777 flights of patients with cardiac and respiratory disorders made during 1949.[1] Vincent M. Downey and Benjamin A. Strickland, in presenting an analysis of this series of patients, state that these observations are part of an investigation carried out in a world-wide system which has been in operation since 1942. The object of this study was to gain definite clinical impressions of how these patients stood the journeys, which were made in non-pressurized aircraft, and in over 96% of flights, at an elevation of under 10,000 feet. Trained nurses watched the patients during flight, and recorded any of certain listed symptoms. Motion sickness in all its manifestations was one of the syndromes given attention, and also the symptoms due to elevation *per se*. These gave no more trouble than in the ordinary passenger: indeed, experience of others has shown that people who are ill are less liable than others to suffer the minor disturbances of motion sickness. But, as the authors remark, it is hypoxia which counts, and, since cabin altitudes of 10,000 feet are seldom exceeded in military or commercial flights, the oxygen saturation of the blood seldom falls below 90%. At these levels there should be no oxygen lack of the myocardium, provided the coronary circulation is efficient. Previous observations have shown that cardiac patients should not exhibit signs such as precordial pain if they are not flown higher than 10,000 feet. Downey and Strickland give a list of cardiac and circulatory diseases which affected members of a series of 464 patients transported by air. These diseases include myocardial infarction and *angina pectoris*, hypertension, rheumatic disease, pericarditis and valvular affections. In only 28 cases of the series of 464 were symptoms noted. One curious feature was that 49 patients with established coronary disease were included in the flights, for at the time in question such patients were excluded from air transportation by army order. However, none had symptoms of the acute order, and none evinced symptoms during the flight. It may be noted that seven patients out of 31 with rheumatic heart disease suffered more or less from motion sickness. This is possibly related to the somewhat greater tendency of such patients to be of the more highly strung type, and to the absence of any signs of acute illness.

Pulmonary disorders were also studied. It is known that expansion of gases in a pneumothorax may cause distress at higher elevations, and reasoning of the "armchair" type has in the past excluded numbers of patients with spontaneous pneumothorax from air travel. Downey and Strickland have records of 568 flights of non-tuberculous patients, only 51 of whom showed any signs of discomfort. Not one of 19 patients with spontaneous pneumothorax had any symptoms related to his condition. The same could be said of 16 patients with atelectasis, including one with massive collapse of a lung. Less than 3% of men with asthma had relevant symptoms. Pleural effusion *per se* seemed to cause distress only by reason of its size, but it might be assumed that any patient with an effusion large enough to cause distress would have it aspirated before he set out on a trip by air. One man with acute pleurisy suffered distress and respiratory difficulty at 9000 feet; he was not relieved by descent to 7000 feet, but responded readily to oxygen. Eight patients with non-tuberculous empyema were very ill, but only one complained of pain and tightness in the chest, and showed some cyanosis, but was relieved by oxygen. Pulmonary tuberculosis did not create a serious problem, but a small minority needed special attention. Of 560 patients suffering from pulmonary tuberculosis only 11 had related symptoms. Four experienced dyspnœa, and five showed some cyanosis, but it is significant to note that in each instance the aircraft was flying at an elevation of over 10,000 feet. Only two patients among 41 diagnosed as having advanced disease had respiratory difficulty. Three of the tuberculous patients had hæmoptysis shortly before the flight, but only one had hæmoptysis during flight, and in this instance the precipitating cause seems to have been air sickness.

The result of this analysis is to confirm the theoretical expectation that there is no general contraindication against air transportion of patients suffering from circulatory and pulmonary diseases, provided the conditions of flight conform to the usual commercial standards. Of course it is especially necessary to attempt some estimate

[1] *Annals of Internal Medicine*, February, 1952.

of the functional efficiency of the coronary circulation, and in particular of the mechanical conditions existing in the thorax in the more serious forms of intrathoracic respiratory disease. Indeed, in many instances, especially in a country of distances like Australia, air transportation of the sick will often be the method of choice.

CHOLESTEROL, LIPOPROTEINS AND ATHEROSCLEROSIS.

IT seems to be fairly well established that there is some relation between the cholesterol content of the blood and the development of atherosclerosis. Whenever there is a persistently high level of cholesterol in the blood, there is a tendency towards early and severe atherosclerosis. Whenever there is severe atherosclerosis there is a high incidence of coronary disease. In animals whenever it has been possible to produce sustained, marked hypercholesteræmia, there is eventually development of atherosclerosis. Patients with definite coronary disease tend to have distinctly elevated levels of cholesterol in the blood serum. There is, however, insufficient information about the utility of serum cholesterol measurements as an indicator of atherosclerosis or as a predictor of impending danger from coronary heart disease. There are several reasons for this. There is, as yet, no way of determining, clinically, the presence of atherosclerosis in man apart from the discovery of coronary disease. Patients with coronary disease show a wide range of concentrations of serum cholesterol and this overlaps considerably the wide range of values found in persons who are clinically normal. On rather inadequate data many physicians in the United States believe that a very large percentage of men of over fifty years in that country have some degree of atherosclerosis. Other chemical data have been sought from blood examinations to aid in the diagnosis. Recently there has been much interest in the lipoproteins of the blood. Most of the cholesterol in the blood does not exist in simple solution, but is associated with complexes of proteins and lipoids in relatively large aggregates. Gofman and his associates in Berkeley, California, have developed methods for separating these complexes in the ultracentrifuge. It is the belief that certain of these complexes are in some way associated with the production of atherosclerosis. Each lipoprotein molecular complex is characterized by its flotation rate in the ultracentrifuge. Since there are several different lipoproteins present in the blood, very similar in structure, it has been found useful to name the individual species by their flotation rates in Svedberg units. Thus, if a molecule migrates in the ultracentrifuge with a rate of 20 units, it is referred to as a molecules of the S_f 20 class. Gofman and associates have adduced evidence that lipoproteins migrating with rates between 10 and 20 Svedberg units are associated with human atherosis.

T. P. Lyon, H. B. Jones, D. M. Graham, J. W. Gofman, F. T. Lindgren and A. Yankley have studied the S_f 10-20 class of lipoproteins in the blood of a large group of patients with coronary artery disease.[1] They found that recurrence of myocardial infarction in patients with previous infarcts, and occurrence of infarction in patients with *angina pectoris*, developed predominantly in that part of the group examined showing the highest S_f 10-20 concentrations over the period of observation. Low fat, low cholesterol dietary regime of patients with coronary disease was effective in reducing average S_f 10-20 levels. This dietary regime has been found useful by others in the treatment of patients with coronary disease. An interesting observation, difficult to explain, is that heparin suppresses the rise in concentration of S_f 10-50 molecules in the cholesterol-fed rabbit, and minimizes the development of atherosclerosis. Heparin produces similar alteration in the lipoproteins of the blood of human subjects, and administration of 20 to 100 milligrammes of heparin produced dramatic relief of *angina pectoris* in 30 of 32 patients for periods of three to ten days following a single injection.

[1] *A.M.A. Archives of Internal Medicine*, March, 1952.

Ancel Keys has made a thorough statistical investigation of data available on the blood concentration of cholesterol in patients with coronary disease and on the concentration of S_f 10-20 molecules in similar patients from data obtained from previous papers by Gofman and his associates.[1] He finds that there is a substantial correlation between the concentration in human blood serum of total cholesterol and the S_f 10-20 molecules. There is no evidence that the concentration of S_f 10-20 is more critical than that of total cholesterol. Both S_f 10-20 and total cholesterol show distinct tendencies to be maintained in higher concentrations in the serum of persons with coronary disease than in clinically healthy persons. Neither measurement, however, is a good discriminator between such patients and healthy persons. If there is any advantage to one of these measurements over the other in detecting or predicting coronary disease, the evidence is in favour of total cholesterol. Keys states that there is no evidence that a level of S_f 10-20 concentration in the blood may be of practical value as an indicator of the probability of present or impending coronary disease. Gofman, naturally, will not agree with this finding. As very few laboratories possess the equipment for determining S_f 10-20 values, we must wait for further information from the few groups who are studying the question.

PROTECTIVE COLLOID AND RENAL CALCULUS.

ONCE infective processes have invaded the pelvis of the kidney, the formation of calculi through precipitation and conglomeration is easy to understand, but a true pathological and biochemical problem confronts the physician when he finds renal stone in what he would designate as normal urinary conditions. From a colloid-chemical point of view urine in health must be considered a supersaturated solution of very complex composition, for it contains certain electrolytes and non-electrolytes in apparent solution at higher concentrations than solubility in water would indicate. This fact was observed many years ago and the correct explanation was put forward that protective colloids prevent the precipitation of crystals and their agglomeration into calculi. This clue has been taken up by Arthur J. Butt and Ernst A. Hauser, who have examined several hundred cases of kidney stone formation and who have shown fairly conclusively that the concentration of protective colloid in the urine is the determining factor; if the colloid is low in relative amount then calculi will be formed; if it is high, then calculi will be absent.[2] Elaborate methods have been adopted for the investigation of the colloid and it has been demonstrated that the formation of renal stone is inversely proportional to the concentration of colloid present. The two sexes and different ethnic groups have been examined and the results have been strikingly concordant. Two of the findings will appear to be of peculiar interest: the urine of women has a higher concentration of protective colloid than the urine of men, and secondly, the urine of pregnant women also shows a higher concentration of the same colloid than that of the non-pregnant. The next and obvious step in the research was to discover whether the colloidality of urine could be increased. Hitherto prophylactic treatment of renal calculi has taken the form of correcting metabolic disorders and lowering the concentration of dissolved substances in the urine by diuretics. Now on the basis of these researches the colloid concentration of the urine has been raised artificially. Hyaluronidase is an enzyme of fairly high molecular weight and contains a substrate hyaluronic acid, a muco-polysaccharide. Subcutaneous injection of hyaluronidase, mixed with saline, produces a marked increase of protective urinary colloid which effectually prevents precipitation in crystalline and macroscopic form. The authors are justified in expressing the opinion that this discovery opens up a new and hitherto neglected field in the prevention and treatment of kidney stone.

[1] *The Journal of the American Medical Association*, December 15, 1951.
[2] *Science*, March 21, 1952, page 308.

Abstracts from Medical Literature.

MEDICINE.

The Pathogenesis of Hypoglycæmia after Gastrectomy.

J.-F. DE LAET AND J. VAN DEN BROUCKE (*Acta gastro-enterologica Belgica*, November, 1951) present the results of an investigation of carbohydrate metabolism in a series of 61 cases; 54 patients had undergone gastrectomy and seven gastro-enterostomy. As a result of their study they advance the suggestion that hypoglycæmia following gastrectomy is due to inhibition of glycogenolysis in the liver, resulting from massive and rapid absorption of glucose through the portal vein.

Urinary Tract Infections.

P. S. RHOADS *et alii* (*The Journal of the American Medical Association*, January 19, 1952) discuss the antibacterial management of urinary tract infections. They state that 20% of all autopsies at the Wesley Memorial Hospital revealed evidence of active or healed pyelonephritis. In most cases some obstruction to urinary outflow was found. Urethritis, vaginal infections, prostatitis and infections of the gastro-intestinal tract also gave rise to infections of the urinary tract, which did not clear up until the cause had been removed. In some patients with symptoms and pyuria, the urine on culture was found to be sterile. Frequently two organisms were present on culture, and if one was eliminated by treatment, the other remained. In other cases one organism was present originally, but if this was successfully dealt with by treatment another organism took its place. In 26 cases *Escherichia coli* was got rid of by treatment, but was replaced by *Streptococcus fæcalis* in pure culture; in 16 cases this order was reversed. At present, bacitracin, aerosporin, polymyxin and neomycin often damage the kidney parenchyma. These antibiotics were excluded in this study. Sulphonamides used in treatment were sulphadiazine, sulphamerazine, sulphamethazine, sulphathiazole and combinations of these drugs. The doses were four to six grammes daily for five to ten days. Later "Gantrisin" was used in similar doses, because of its greater solubility and equal effectiveness. "Mandelamine" (methenamine mandelate) and calcium mandelate were tried, but were found less effective. The authors used penicillin, chloramphenicol, streptomycin, aureomycin and terramycin in different patients, in addition to sulphonamides. As a rule the drug found most effective against the prevailing organisms *in vitro* was used in treatment, in addition to "Gantrisin", in doses up to six grammes daily. Treatment often had to be repeated, but symptoms were usually relieved rapidly by the above methods.

Antibiotic Synergism and Antagonism.

E. JAWETZ *et alii* (*The New England Journal of Medicine*, December 20, 1951) discuss antibiotic synergism and antagonism. They state that the possibility of antibiotics aiding or obstructing each other if used indiscriminately is obvious. Most streptococcus infections respond to chemotherapy. *Streptococcus fæcalis*, which may cause endocarditis or urinary infections, is an exception. *In vitro* this organism resists penicillin and other antibiotics, but a combination of penicillin and very small doses of streptomycin greatly increases the bactericidal action. This synergistic action was confirmed clinically. Staphylococci appear to have become resistant to the antibiotics, and a combination of two or more antibiotics is often necessary for success. Endocarditis due to *Staphylococcus albus* may resist penicillin and aureomycin in adequate dosage, but may yield to terramycin and streptomycin. Sensitivity tests are helpful in such cases, and should be freely used. In mice *Streptococcus pyogenes* responded better to penicillin alone than to combinations of penicillin, chloramphenicol, terramycin or aureomycin. Ineffective doses of any of the latter antibiotics if added to penicillin reduce the cure rate. The authors advise careful sensitivity tests when antibiotics are being used.

"Banthine."

G. G. MCHARDY *et alii* (*The Journal of the American Medical Association*, December 22, 1951) report the clinical evaluation of methantheline bromide ("Banthine") in gastro-enterology. They state that this anticholinergic, a quaternary ammonium salt, inhibits acetylcholine at the postganglionic parasympathetic nerve endings, and blocks acetylcholine transmission through autonomic ganglia. Salivation is inhibited for some days until the patient becomes accustomed to the drug. Gastric secretion is diminished in volume, but acidity is only slightly affected in normal subjects. In some cases of duodenal ulcer, secretion was depressed. The usual dose is 100 milligrammes every four hours. Cardiospasm was aggravated by "Banthine". Gastric motility and pylorospasm were diminished. Effects on the small bowel were difficult to determine. Patients with colon disease did not benefit, though "Banthine" usually inhibited the gastro-colic reflex. Patients with ulcerative colitis were not improved. Duodenal ulcer was not cured more quickly, but pain was relieved by "Banthine". "Banthine" was superior to atropine as an antispasmodic. Doses varied from 100 milligrammes every four hours to 150 milligrammes at bedtime and 50 milligrammes every morning. Facial dermatitis was observed twice. Ischæmic pain in association with coronary disease was produced, and urinary retention was constant if "Banthine" was used pre-operatively. Ileus has been produced and aggravated by the drug.

Sleeping Posture in Pulmonary Tuberculosis.

W. H. HELM (*Thorax*, December, 1951) has found that iodized oil introduced into the bronchial tree on one side of the body only will gravitate in the course of an hour or so into the bronchial tree of the opposite side if the subject lies with the injected side uppermost. The spillover was found to occur particularly readily during sleep, and was of the same degree whether or not coughing occurred and whether or not the bronchial mucosa was anæsthetized. The oil tended to gravitate especially into those parts of the lungs in which contralateral spread of tuberculosis is commonly seen. The author therefore investigated the sleeping posture of 147 patients with pulmonary tuberculosis. Of 89 patients with contralateral spread, 58 tended to sleep with the side of the unilateral cavernous disease uppermost, while of 58 patients without contralateral spread, only 16 slept with the diseased side uppermost. The author recommends that persons suffering from unilateral pulmonary tuberculosis should sleep with the sound lung uppermost, that is to say, on the diseased side.

The Coexistence of Rheumatic and Arteriosclerotic Heart Disease.

J. CHASNOFF AND A. SILVER (*American Heart Journal*, December, 1951) found in the course of post-mortem examinations that, in subjects over the age of forty years with rheumatic heart disease, the coexistence of arteriosclerotic heart disease was fairly common. The authors have observed "resistance" on the part of physicians to the making of the dual diagnosis, and they believe that there are no grounds for this.

Ergot Alkaloids in the Treatment of Hypertension.

D. F. GIBBS (*British Heart Journal*, January, 1952) has treated patients suffering from high diastolic blood pressure with dehydrogenated alkaloids of ergot; these are more powerful than their parent alkaloids in paralysing motor elements having sympathetic innervation. The most pronounced response was seen in three patients with malignant hypertension and good renal function. Nasal congestion, attributed to blockade of the stellate ganglion, was the commonest side-effect. Mild drowsiness was also produced on occasion, and was thought to be possibly due to central nervous depression. Headache, tiredness and palpitation were relieved in the majority of cases.

Ligature of the Inferior Vena Cava in the Treatment of Heart Failure.

P. COSSIO (*American Heart Journal*, January, 1952) has observed in detail 90 patients in whom the inferior *vena cava* has been ligated for uncontrollable heart failure. The surgical mortality was at first of the order of 25%, but of the last 70 patients only four have died. Early improvement, sometimes most surprising, was observed in 70% of the patients and was maintained for months or even years in the majority, provided that medical treatment was continued. The early improvement was attributed to the diminished return of blood to the heart, and the later improvement to the formation of a lake of blood with a slower return in the recumbent position.

Mortality of Acute Myocardial Infarction in Private Practice.

SAMUEL BAER, WILLIAM I. HEINE AND SIDNEY D. KRASNOFF (*The American Journal of the Medical Sciences*, November, 1951) discuss the mortality of acute myocardial infarction in private practice. Mortality rates published in the past two decades for this condition have varied from 9% to 51·5%, and impressed by this great variation of figures, the authors decided to review a series of cases. An analysis of 1200 consecutive cases of acute myocardial

infarction admitted to hospital over sixteen years showed that the annual mortality rate varied from 51% to 21% with an average of 34%. Then they reviewed 182 patients with this condition who had been treated in their homes by the family physician. The immediate mortality rate for this series was 8·5%, which contrasted sharply with most figures based on patients in hospital. The apparently more favourable prognosis of acute myocardial infarction, when all cases are considered, casts doubt on the advisability of routine admission to hospital and routine anticoagulant therapy.

The Effect of Human Urine on Tubercle Bacilli.

K. B. BJÖRNESJÖ (*Acta tuberculosea Scandinavica,* 1951) has found that human urine has a bacteriostatic effect and also a bactericidal effect upon tubercle bacilli. The constituent of the urine which gives it these effects is not influenced by the hydrogen-ion concentration, by the sex of the patient, by reaction or failure to react to tuberculin, by the presence or absence of tuberculous disease in the body or by the taking of a vegetarian diet. Experiments show that it is not urea, uric acid, creatinin, hippuric acid, the amino acids, the salts, phenol, paracresol or the indol derivatives. It is not volatile, and it is resistant to the action of acid, alkaline and neutral solutions at 100° C. It is soluble in water and in absolute alcohol, but not in acetone, ether, petroleum ether, benzene, carbon tetrachloride or chloroform. It dialyses easily through "Cellophane". It is weakened in its effects by the addition of serum albumin. When the urine is subjected to electrodialysis it is found in the anode fraction but not in the cathode fraction.

Cardio-Vascular Function and Gastro-Intestinal Disease.

EDWARD SUCKLE AND GEORGE K. WHARTON (*The American Journal of Digestive Diseases,* September, 1951) discuss the interrelationship between cardio-vascular function and gastro-intestinal disease. They review the literature on the subject and present notes on illustrative cases. They emphasize the effect of reflex vagotonia on the coronary circulation and discuss other methods of how the gastro-intestinal system may adversely affect the cardio-vascular system. They state that failure to recognize that the cardio-vascular system may respond reflexly to extracardiac influences leads to error. Abnormal electrocardiograms alone or changes in the X-ray appearances of the gastro-intestinal system do not suffice to implicate one system as totally responsible for the patient's symptoms. Unless a multilateral history is developed and then integrated with physical and laboratory findings, the result can be an erroneous emphasis on the organ acting reflexly. Drugs which are commonly supposed to be specific in their effect on the cardio-vascular system, such as amyl nitrite, aminophyllin and papaverine, actually have a similar action on the smooth muscle of the gastro-intestinal system. The initial therapeutic response, therefore, is misleading in some cases. There are four ways in which the abdominal organs may adversely influence the cardio-vascular system. The first is by sudden increases in reflex vagotonia with consequent embarrassment of a cardiac coronary circulation not equal to sudden stresses. The occurrence of these instances in older patients is in keeping with the concept of vagotonia increasing with age. Secondly, abdominal distension, if pronounced, or acute dilatation of the stomach, or a large diaphragmatic hernia, serves to diminish the vital capacity of the pulmonary system and may also interfere with the normally unrestricted motion of the heart. Thirdly, the effects of electrolyte change, such as occurs in intestinal obstruction, removal of ascitic fluid and pancreatitis, are reflected in alterations in the electrocardiogram. Finally, shock-producing states, such as severe hæmorrhage from a peptic ulcer or shock from fulminating peritonitis, can greatly depress cardiac function. Gastro-intestinal disease may thus mimic cardiac disease, and correction of disease within the abdomen often serves to decrease cardiac load and improve circulatory function.

Sarcoidosis and Cortisone.

L. E. SILTZBACH *et alii* (*The Journal of the American Medical Association,* November 3, 1951) describe the effect of treatment of a patient with virtual blindness due to sarcoidosis. The sarcoid condition was generalized. Cortisone was given daily for fifteen weeks up to a dose of 13·7 grammes in all: 150 milligrammes daily for three weeks, 100 milligrammes daily for the fourth and fifth weeks, 75 milligrammes daily for the sixth and seventh weeks, and then 50 milligrammes daily. The effect on the eyesight and on the general condition was very good, and improvement was maintained.

F. J. LOVELOCK AND D. J. STONE (*ibidem*) report two patients with pulmonary sarcoidosis who improved greatly on treatment with cortisone, 200 milligrammes for two days, and then 100 milligrammes for twenty-six days in one case, and for eighteen days in the other. Rapid clearing of the pulmonary lesions was observed.

M. J. SMALL (*ibidem*) records a favourable response in a patient with pulmonary sarcoidosis and in one with glandular involvement on treatment with 100 milligrammes of cortisone given daily for six weeks.

Functional Hyperinsulinism and Visceroptosis.

H. LAYZER (*The American Journal of Digestive Diseases,* October, 1951) discusses the relation of functional hyperinsulinism to visceroptosis and analyses 21 consecutive cases. He is of the opinion that many cases of functional hyperinsulinism and hypoglycæmia are principally caused by visceroptosis. The mechanism by which visceroptosis may effect functional hyperinsulinism is based on the twisting of the pancreatico-duodenal vein producing venous stasis in the pancreas. Reports of 21 cases with results of four-hour oral glucose tolerance tests are presented in support of these statements. In these cases, the use of pelvic supports provided great and immediate relief, and the symptoms of hypoglycæmia were lessened. Eleven of the patients were under thirty years of age and one was thirty years of age. The author states that this suggests that the disease may be an important factor in the sudden deaths of young people following strenuous activity. The cases referred to in this series represent the last 21 cases of visceroptosis to come under the author's care in which the patients submitted to the four-hour glucose tolerance test. The fact that all of them had disturbances of blood sugar regulation implies that the condition described is fairly common.

Hypertension.

I. H. PAGE (*The Journal of the American Medical Association,* December 1, 1951) discusses the treatment of essential and malignant hypertension. He states that phenobarbital and chloral hydrate with bromides are the best drugs for producing daytime relaxation without too much sleepiness. He has used propyl thiouracil 200 milligrammes four times daily with quietening effect, but does not know the long-term effect. He discredits salt-free diets, but uses them with a special salt-free milk and specially baked potatoes, oleomargarine and sugar. He says that the rice diet and diets of low cholesterol content are over-valued. He mentions daily doses of 15 grammes of 50-50 ammonium potassium resin to reduce the blood sodium level, but admits that they are no gastronomic delight. Surgery may help malignant hypertensives, but cannot be relied on. Potassium thiocyanate is useful for intractable hypertensive headache. He discounts its toxic effects (but one must remember that it is akin to cyanide). It must not be given without control of blood levels. The methonium salts have several unpleasant side effects, such as constipation, loss of ocular accommodation, dry mouth and postural hypotension. He quotes Smirk, whose patients were all in public hospital, in advocating doses up to 250 milligrammes daily. Smirk also mentioned retention of urine as a not uncommon complication of this treatment. The author states that dibenamine is not helpful. Veratrum alkaloids leave much to be desired. Sodium nitroprusside, 30 milligrammes four times daily, may be used, with blood controls. Thiocyanate intoxication often occurs. Intramuscular injection of 1-hydrazinophthalazine in doses of two milligrammes per kilogram lowers blood pressure. Doses of 100 milligrammes to 1·4 grammes daily were given to patients in hospital. Headache, nausea and vomiting were complications. The patients must be in bed because severe orthostasis occurs preceding the fall of blood pressure. This is the latest drug and it is said to be useful in cases of malignant hypertension. The necessity of excluding urinary infection and especially pyelonephritis is emphasized. The author favours the use of a soluble bacterial pyrogen which is given as an infusion in 200 millilitres of saline in amounts sufficient to raise the temperature to 101° or 102° F. Thereafter the dose is judged from the temperature response of the previous day. If the amount required is excessive a rest of three to five days is given. He says that he has had especially good results in the treatment of malignant hypertension, results far superior to those obtained by sympathectomy. In conclusion, the author mentions the necessity for careful investigation, the use of one or many methods, careful diagnosis and careful therapeusis.

Special Articles for the Clinician.

(CONTRIBUTED BY REQUEST.)

XXX.

THE PROBLEM OF ADOLESCENCE.

What is youth?—a dancing billow,
Winds behind, and rocks before!

THE other afternoon a senior medical student asked me to excuse him as he had to hurry off to learn to be a doctor and he would not be late for worlds! I delayed him just long enough to discover that he was to keep an appointment with a practitioner who was taking him to his surgery to induct him into the art of medicine by arrangement with the Dean of the Clinical School. That afternoon I had received the present assignment, and, as it happened, had read the recently published article, "Student Training in the Personal Relationships between Doctor and Patient", by Rubbo and Gladwell.

Family doctors and many specialists have to face the problem of adolescence frequently. Fond parents bring their offspring along with weird stories of deviations from rectitude, hypercriticism of minor physical aberrations or tales of emotional disturbances and anomalous behaviour. The juvenile victim is often bewildered and reluctant when hauled before the medical beak over some matter which, to the youngster, appears to be an intimate and personal one of no concern to the doctor. If a false step is taken or the wrong thing is said, an unpleasant situation is liable to develop, and the patient will become sullen or aggressive, but definitely suspicious and refractory. If, on the other hand, the physician is an expert angler of adolescents, he conceals the barb and places the correct bait deftly to hook his fish. He proceeds to play it patiently until he can draw it gently and securely into his keeping. He then changes the bait and hooks the parent fish. Thereafter, he can place them in his private aquarium and feed them scientifically, and, as they become docile, they will flourish in the new environment to the point at which their captor judges it safe and wise to liberate them to take their chances in the muddied waters beyond the sheltered piscatorial retreat.

The quintessence of the problem is the complexity of its myriad facets, each reflecting some blend of an assortment of immature features. Physical, emotional, intellectual and social approaches towards maturity by no means necessarily proceed apace. The irregularity of the march of events is often the explanation of maladjustments and of the episodes that precipitate the appeals to the doctors for assistance and advice. If a doctor has had the privilege of knowing the family well in the preceding years and goodwill already exists, the task is lightened considerably; paidological guidance is a preventive measure against serious growing pains in adolescence. When the patient is a stranger to the doctor, any relevant matter should be discussed freely, in a friendly manner, out of hearing of the parents, and the youngster should feel that the doctor is ready to render any service within his power to restore confidence and equanimity. A knowledge of the ways, acts and thoughts of young people grows as the years go by, so long as the doctor guards against what may be dubbed sclerosis of his emotions and ideas. To be in the position to probe the young mind painlessly, lay bare emotions and rationalize the mysterious anomalies, it is necessary to be *en rapport* with the child in language and ideation; geniality, patience, optimism, humanity and mental resilience are needed.

Age and sex in adolescence take on new meanings for the observant parent, teacher and doctor; they must think in terms of developmental levels instead of grossly misleading chronological "norms". The disparity between individuals is very great, and in measuring levels of maturation, totally different standards are needed for the sexes; the girls rush ahead of the boys of their vintage after the menarche, which profoundly affects the personality pattern. The heterogeneous nature of the individuals militates against the chances of satisfactory adjustment in the classes at schools, and many complaints arise there in consequence.

In many instances, the overt reason for seeking the interview with the doctor is some physical sign or symptom which seems to be at the root of the trouble. Oft-recurring headaches, the tendency to tire too easily, suspected anæmia, nervousness and undue strain are frequently mentioned. Facial tics, blepharospasm, shoulder-shrugging and nocturnal enuresis occur at times. Withdrawal from company, loss of interest in play or schoolwork, glumness, moodiness, aggressive behaviour and stubbornness are represented in the symptomatology. Parents do not seem to be able to realize that the youngsters leave infancy and little childhood behind at differing ages, or that adolescents feel more grown-up than they really are. They do not encourage the assumption of responsibility and the aspiration to share the privileges of adulthood. They often refer to the unpredictability of moods and reactions and to the painful domestic upsets that occur. The adolescents have an inner urge to assert their ideas earnestly and seriously, especially when at home. If this struggle for independence is treated as an insurrection by crushing discipline or snubbing, the child must retreat cowed or conduct open warfare till the campaign is terminated.

I shall content myself with the mere mention of a few conditions which distort the picture of adolescence and create new grave problems of their own. In this category are mental defectiveness, severe physical handicaps, gross acts of juvenile delinquency and definite psychiatric diseases.

All good doctors should strive to prevent the disruption of family units and to protect the juvenile members from contagion when the parents are quarrelsome. Membership in a happy, free family circle with love abounding is a priceless boon. There is a high incidence of psychopathology among members of broken families.

Radiant Adolescence.

Most young people emerging from childhood and on the way to maturity are a constant source of delight to parents, teachers, doctors and all who are brought into intimate contact with them. Their zest for life, versatility and boundless energy are amazing. Their *joie de vivre*, optimism and enthusiasm are inspiring. Their scholastic accomplishments and sporting achievements are thrilling. They usually have personal charm, physical beauty and enviable stamina. They enjoy each other's company and prefer orderliness to lack of rules. They follow their fashions and their leaders, but subject each other to merciless criticism. They seek the answers to the most difficult questions on physical and metaphysical subjects with becoming profundity. In all innocence and with great courage and pertinacity they attack the sex question from a very tender age and, later, they indulge in daring practical work in the subject, falling in and out of love with each other every few months. They outvie each other in the adoption of aids to attract the opposite sex, though few admit the motive. They satisfy gregarious and cultural instincts by means of full-blooded outdoor activities and arts and crafts of all kinds. They collect cards, stamps, books, musical records and a variety of pets. They dance and sing and play musical instruments. Most of them love little children and animals intensely. Creeds and heroes, speed, size and pageantry make an immense appeal to them.

Out of this whirling welter of radiance, the casualties come spinning in our direction to create the problem of adolescence. We must search for the accidental or environmental interferences which cut the individuals away from the herd.

Some Clinical Aspects.

The acne-pocked, pimply face of the adolescent is a familiar sight in consulting rooms. One sympathizes with those who merely advise local and physical treatment. The damage to the prestige or *amour propre* of the sufferer is considerable and warrants sympathetic consideration. Even a few hairs out of place on a girl's chin can disturb her peace of mind and be a constant source of anxiety and dissatisfaction to her.

I remember an undersized girl of eighteen years who was very adversely affected in spirit by the domination of a hard, impatient father. She became glum and depressed and used the "escape" or "flight" mechanism to avoid friction with him. She was not mentally retarded, but was emotionally underdeveloped. After the matter was talked out with her and with her parents, including her father, she was handled differently at home. She was allowed to work out ways and means of carrying out her duties without interference from the home folk, and she soon became a bright, chirpy, normal lass.

In another family tangle, two boys became overwrought under the hammering of a dour Scot of the old school, who was master in his own house. The older lad left home and took an unsatisfactory billet at about sixteen years, and

the other planned to leave home at the earliest favourable opportunity. By firm grasping of the thistle, the sting was taken out of it to the great relief of all concerned.

By way of contrast, I am able to record that the mother of three adolescents told me that there was no need for discipline in their home as they all loved each other and no one would care to disturb the harmony. It sounds too Arcadian to be true, but I know them all very well and have every reason to believe her.

There are a lot of school situations that crush older children. They are weighed down intolerably by a load of tasks including extras and are goaded to despair by unsympathetic, ambitious parents and teachers. The doctor should not hesitate to inquire closely into the details and offer advice to secure the mental health of the patient. It is quite usual, in such a case, for the symptoms mentioned by the parent to be merely the physical concomitants of a secondary nature; the basic facts have to be obtained by direct questioning. It is helpful to secure a report from the school teacher as a supplementary source of information.

The occurrence of corpulence is a potent cause of distress in adolescence. The subjects become sensitive to banter and are self-conscious and humiliated. Unfortunately many of them are in a vicious circle, as they are prone to gratify their appetites for food as a compensation for self-denial in other directions. Though they want to swim and indulge in sports just as much as their fellows, they are ashamed to wear shorts or perform poorly, so they abstain from these activities. Some become aggressive and defiant, but others are just sad and depressed. Corpulence should be nipped in the bud before much psychic damage is done. In long-standing cases it is harder to get good results, as the harmful habits and attitudes are fixed in deeper grooves; they must be eradicated, and it is never too late to try.

The Frölich syndrome is extremely rare, but it is by no means uncommon for fat boys to be presented to the doctor because of parental concern about the insignificant looking genitalia. As a rule, when the corpulence is treated effectively, that concern is removed and the organs assume normal proportions. Boys and girls alike vary considerably in chronological age of appearance of secondary sexual characteristics, but the extremes of early and late appearance of these changes worry the parents and, at times, the youngsters themselves. In incomplete descent of the testes, it is necessary to discriminate carefully between simple delay and arrest in descent due to ectopic position. In simple delay, which is common, reassurance, reexamination and masterly inactivity are indicated. Great judgement should be exercised before embarkation on courses of injections. A similar attitude should be adopted in delayed onset of menstruation.

It should be well known that a significant proportion of girls miss several menstrual periods when a drastic change in environment occurs. This phenomenon is noticed at boarding schools and in schools of nursing and other places where young girls are undergoing vocational training as residents under disciplinary supervision. It also happens on their leaving school and obtaining employment or taking unaccustomed responsibility. One can scarcely avoid the postulation that the psychic stress influences the menstrual cycle. The parents are usually the worried parties. Explanation and reassurance usually suffice to allay the anxiety engendered.

Another set of circumstances with a recurrent pattern is associated with "job-shock" during the early stages of employment after leaving school. Sensitive youngsters over-react to criticism or admonition by "bosses"; they become unhappy and throw the job up prematurely or actually absent themselves from work unnecessarily. At times they "play the truant" and attempt to deceive their employers and their home folk; the fat is in the fire when pay day brings exposure or the deception is discovered. Even in normal circumstances it is exceptional to find the suitable job without several preliminary experiments which fail. Apprenticeship to a selected trade or profession is not accepted sufficiently often; the novice may then be taught systematically and become skilled and secure while he earns his keep. Aptitude tests and a battery of intelligence tests as applied by experts are very helpful in vocational guidance. The parent or the school authority should not exert undue influence on the adolescent who has not made up his mind about the selection of a vocation; only a foolish parent will show active opposition to a firm choice or call. The family doctor can often act as a referee with success, especially when armed with a professional vocational guidance report and an insight into the personalities and characters of the members of the family.

The depredations of Eros and the stinging wounds of Cupid must be mentioned here, as their victims seek the benefit of medicine even when denied that of the clergy! Preparation for marriage has its medical angles, and the profession should not let the laity down when blushing couples humbly admit their innocence and ignorance. The boys as well as the girls feel better after they have gone over the age-old story with the trusted friendly doctor. The lovelorn lass can upset the household—a mother took the trouble to put a telephone call through to me to tell me that the lights had come on again in the home because her daughter was in love again; they had almost gone out a year earlier when a callow youth had changed direction and worn a track to another girl's house!

I must call a halt to this procession of clinical aspects, which extends far into the distance. I hope I have said enough to arouse interest and provide something for my colleagues to think about. The outcome of their thoughts may be of benefit to their adolescent patients, and thus my objective will be attained.

HOWARD BOYD GRAHAM,
Melbourne.

Medical Societies.

MELBOURNE PÆDIATRIC SOCIETY.

A MEETING of the Melbourne Pædiatric Society was held on May 14, 1952, at the Children's Hospital, Melbourne.

Reticuloses.

DR. R. N. O'REILLY presented the case history of a boy, aged three years and eight months, who had been suffering from leuchæmia. He said that the patient had presented an unusually difficult diagnostic problem over a period of ten weeks, but at the end of that period typical features of leuchæmia had developed and the child rapidly deteriorated and died. He had been quite well until three weeks before his admission to the Children's Hospital, when he developed pallor, listlessness and feverishness and was admitted to a country hospital for treatment of an ear infection and cervical adenitis. He was discharged to his home after forty-eight hours, and readmitted to hospital five days later with anæmia, leucopenia, granulopenia and an ulcerated mouth. A provisional diagnosis of leuchæmia was made, and after a blood transfusion, he was transferred to the Children's Hospital.

On admission to the Children's Hospital he was found to be a pale child with a temperature of 103° F., swollen and cracked lips, an ulcerated mouth and a tender liver enlarged to four or five centimetres below the right costal margin. Large tender glands were present in the submaxillary and submental regions. There were also tender glands in the left inguinal region, but he had infected intravenous wounds over both ankles. The spleen was not palpable. A provisional diagnosis was made of leuchæmia with agranulocytosis and secondary infection. Examination of bone marrow and peripheral blood films did not substantiate the diagnosis of leuchæmia. After a blood transfusion, investigations were carried out for a pyrexia of unknown origin with hepatomegaly. The only abnormal finding was persistent growth of a culture of *Proteus vulgaris* without pyuria in the urine.

Over the following ten weeks there was little change in his general condition. The temperature persisted, the weight remained constant, the liver was unchanged, and the findings from repeated peripheral blood and bone marrow examinations were normal. Drainage of abscesses in the submaxillary glands and treatment with antibiotics had no effect, and no definite diagnosis was made until ten weeks after admission to hospital, when he developed a generalized glandular enlargement and, shortly afterwards, a rapidly increasing enlargement of the spleen and liver. In a period of one week the white cell count increased from 17,000 per cubic millimetre, with a normal differential count, to 124,000 per cubic millimetre, with 87% of abnormal mononuclear cells. One week later, the total number of white cells was 215,000 per cubic millimetre, 88% being abnormal mononuclear cells. The hæmoglobin concentration fell from 12·8

to 6·2 grammes *per centum* over the same period. The child deteriorated rapidly, and at the time of his death his condition was a typical case of leuchæmia.

DR. A. W. VENABLES presented the case history of a boy, aged two and a half years, who had been admitted to the Children's Hospital in June, 1951. The child was a country boy, who had previously had no significant illnesses. Four days before his admission to hospital he had developed central abdominal pain. Next day his temperature rose to 103° F. and he had a convulsion, after which he complained of pains in his left leg, movement of which was restricted. On admission to hospital he was still febrile with local swelling and tenderness over the shaft of the left femur suggesting acute osteomyelitis. The result of blood culture was negative, and X-ray examination of the limb showed thickening of the upper part of the left femur with periosteal layering and underlying cortical destruction. Both femoral necks showed some absorption. Because of these findings, further X-ray pictures were taken; these revealed multiple areas of rarefaction of varying size in his skull, and indefinite changes in the knees, wrists and iliac crest. The lung fields were normal in appearance. Blood examination revealed anæmia (the hæmoglobin value was 10·5 grammes *per centum*) with no specific abnormality in the white cells. Biopsy of the skull showed that the rarefaction was due to replacement by an abnormal cellular tissue suggested by Dr. A. Williams to be either neuroblastoma or a reticulosis.

Dr. Venables said that over the eleven months since the patient's initial admission to hospital, his condition had slowly but progressively deteriorated. Throughout that time he had been intermittently and irregularly febrile, with a temperature ranging to 103° or 104° F.; at times the temperature had been higher, in association usually with attacks of abdominal pain and constipation attributed to subacute intestinal obstruction. There had been progressive severe anæmia despite blood transfusions, and recently the patient's hæmoglobin value had fallen to about five grammes *per centum*, but at no time had there been any characteristic change in the leucocyte count. The X-ray changes had increased steadily and had become more widespread, but they were still largely destructive in nature. Gross changes had occurred in the skull and long bones, as well as collapse of many of the bodies of the vertebræ with kyphosis and production of a "squat" appearance in the child. Quite considerable thickening was now present over the left humerus and left femur. The spleen had recently become palpable, but that might well have been secondary to the skeletal deformity. Bone marrow biopsy in April, 1952, had revealed replacement of hæmatopoietic tissue by abnormal mononuclear cells of obscure type. Serum protein levels were normal, and no Bence-Jones protein had been detected in the urine.

Dr. Venables concluded by saying that the case presented a combination of multiple osteolytic lesions with marrow replacement by abnormal cells and progressive anæmia, but no change in the peripheral leucocyte picture and no real evidence of visceral involvement.

DR. ALAN WILLIAMS discussed the pathology of reticuloses in children, and mentioned the essential features of leuchæmia, Letterer-Siwe disease, eosinophile granuloma, and Hand-Schüller-Christian syndrome. After enumerating the histological features associated with typical examples of these last three diseases, he mentioned that the pathology was often complex and features of more than one of the diseases appeared to be present in a single patient. That had led many pathologists to believe that they were dealing with variants of the one disease, the histological basis of which was a histiocytic granuloma.

DR. FRIEDA PLARRE demonstrated radiological changes in the upper part of the femora, skull and spine of the patient whose case history Dr. Venables had presented. The changes were not typical of those described in other cases of reticuloses in children.

DR. HOWARD WILLIAMS said that spontaneous remission to normal of changes in both peripheral blood and bone marrow, as demonstrated in Dr. O'Reilly's case, was most unusual. He also commented on the unusual feature of the absence of visceral lesions in the case presented by Dr. Venables.

DR. ROBERT SOUTHBY said that a high proportion of children suffering from leuchæmia, whom he had recently seen, had presented with infected throats and regional adenitis. He wondered if that could have any ætiological significance.

DR. JOHN COLEBATCH thanked Dr. Alan Williams for clearly explaining the broad concept of reticulosis as a term to cover not one but a group of disorders with hyperplasia of the reticulo-endothelial system—from malignant neoplasms to benign chronic granulomata—and said that leuchæmia was included in that group. That served to emphasize the fact that leuchæmia was not a primary disease of the bone marrow, but a disorder of the reticulo-endothelial system which would eventually involve the bone marrow in each case, as was illustrated by the first case discussed. Regarding the problem of diagnosis, Dr. Colebatch said that Dr. O'Reilly's case provided a good example of the fact that although pancytopenia of the blood might occur from such causes as infection, aplastic anæmia and disturbance of the bone marrow by metastases from neoplasms (especially neuroblastoma), the commonest cause of such a blood picture in children was leuchæmia. The initial myelogram in Dr. O'Reilly's case did actually show a relative hypoplasia of the erythroblast series; the myeloid-erythroblast ratio was 7:1, whereas the mean figure for normal subjects at that age was 3:1. However, there was certainly no indication of leuchæmia in the myelogram, though later the leuchæmic cells were present in profusion. Dr. Colebatch said that that happening was not so uncommon in adults, but he could recall only three similar cases in about 200 cases of leuchæmia in children. He had never before seen it occur in a child with monocytic leuchæmia; nor had he previously seen a child with leuchæmia run such a prolonged pyrexia as in the present case.

In one similar case when the patient had been under Dr. Colebatch's care in England, the bone marrow for fifteen months had resembled that of aplastic anæmia, but then definite leuchæmic changes had developed and months later the child died from lymphatic leuchæmia. When Dr. Colebatch had presented the case at the Royal Society of Medicine, the question had been raised whether the child had had leuchæmia throughout, or whether it had developed only during the course of her treatment for another condition. Dr. Colebatch wondered whether the same consideration was not applicable to the case described by Dr. O'Reilly.

With regard to the treatment in the case described by Dr. Venables, Dr. Colebatch suggested a trial of chemotherapy with a drug such as triethylenemelamine, which Dr. Sydney Farber had been using in Boston with some success for certain of the reticuloses.

Subacute Inclusion Encephalitis.

DR. E. GRAEME ROBERTSON presented the case history of a girl, aged five and a quarter years, who had been admitted to the Children's Hospital in April, 1952, under the care of Dr. L. P. Wait, who had requested Dr. Robertson's opinion. The history was one of rapid decadence of higher cerebral functions over a period of two months, advancing to dementia and quadriparesis. While the patient was in hospital myoclonic movements commenced and occurred at intervals of five to seven seconds. Further decadence occurred to a stage of dementia and paralysis suggesting a state of decortication. Lumbar puncture produced cerebro-spinal fluid under pressure of 200 millimetres of fluid (the child was crying); cells present were three lymphocytes per cubic millimetre; the total protein content was 35 milligrammes *per centum*; the sugar content was 50 milligrammes *per centum*; the Lange reaction was represented by the figures 0001221000. The outstanding characteristic of the electroencephalogram was the occurrence each five to seven seconds of bursts of slow waves, which corresponded to the myoclonic jerks, but continued when the myoclonic jerks disappeared during sleep. Strong sensory stimuli also provided similar outbursts. Dr. S. Fazekas had provided the following report on serological findings:

> Mumps: antihæmagglutinin—strong positive; mumps complement fixing antibody—trace. All other antibodies —negative. Interpretation: Recent mumps infection, not earlier than six months, and not later than three months ago.

The child had been in close contact with a patient suffering from mumps five months previously. It was considered that that was of no importance in the ætiology of the child's condition.

Dr. Robertson said that he considered that the case corresponded closely with two described under the name "subacute inclusion encephalitis" in 1933 and 1934 by Dawson, and with four recorded in 1948 by Brain, Greenfield and Russell. In 1950 Greenfield had added two further cases. Three cases had been described in the United States of America by Malamud, Haymaker and Pinkerton, but some differences existed. The electroencephalogram was similar to that described by Cobb and Hill as occurring in the disease. The only alternative diagnosis seemed to be Van Bogaert's "subacute sclerosing leucoencephalitis", the differentiation being impossible on clinical grounds alone.

DR. STEPHEN FAZEKAS said that nothing was known of the nature or transmission of the causative agent of the disease. He also said that inclusion bodies were not sufficient to allow the establishment of viral ætiology, and only after identification of the agent could that be done.

Some Aspects of Flexor Tendon Repair.

DR. A. R. WAKEFIELD spoke on "Some Aspects of Flexor Tendon Repair". He said that errors were frequently made in the diagnosis of divided flexor tendons. The evidence obtained from subjective tests was often unreliable. The apprehensive patient might be afraid to move his finger though the tendons were intact. Conversely, even with divided tendons, there might still be synovial continuity, the vincula often remained intact, and in the proximal part of the palm there were tendinous connexions from one finger to another, all of which could produce limited though deceptive movement. Simple recoil from the fully extended position was another trap for the unwary. A reliable and simple test of tendon section was observation of the hand as it lay at rest, after the child had been quietened and comforted. If the tendons to any finger were cut, that finger was out of line with the normal gradient of finger flexion at rest, and it did not take part in the altering degree of finger flexion with changes of wrist position.

The frequency of associated nerve lesions was a matter of diagnostic importance. In young children, for whom there were no satisfactory objective tests, it had to be assumed that a nerve was cut until proven otherwise—until its continuity had been demonstrated at operation. Even in adults the results of tests for nerve continuity soon after injury were often equivocal owing to common abnormalities in patterns of cutaneous distribution, trick movements and lack of cooperation by the patient. Partial nerve injuries also clouded the issue.

Dr. Wakefield then spoke on the technical problems of flexor tendon repair. After dealing with lesser problems, he considered in detail the main problem—that of the scar and its effect. He said that all tissues divided and repaired healed by being joined together by a layer of granulation tissue which ultimately matured to adult scar tissue. The extent of the scar tissue was determined by the degree of injury and the surgical technique. Scar eliminated tissue planes, and the tendons were therefore joined to each other, to the bone, to the tendon sheath, and to subcutaneous tissue and skin by a layer of scar whose thickness depended on whether the repair had been a good or a bad one. In both cases, however, the repaired tendon was fixed to the rigid sheath which surrounded it and often to the bone behind, and thus the tendon failed to work. That applied to a finger injury, but with a deep palmar laceration, although the healing process and scar were similar, the surrounding tissues to which the tendons became attached by scar were different. Instead of a rigid tendon sheath, there was loose filmy paratenon, there was no bone immediately subjacent, and the other soft tissues and fat surrounding the tendons had a degree of elasticity. The repaired tendon, although adherent to its surroundings, could move because of their elasticity, unless there had been very clumsy surgical technique. The extent and density of the adhesion and the elasticity of the structures to which there was adhesion would determine the function of the tendon.

It was important to know the excursion of the tendons in moving the joints through a full range. For the *flexor digitorum sublimis* it was about 2·8 centimetres, and for the *flexor digitorum profundus* about 3·3 centimetres. The flexor tendon repair must be such that the elasticity of its surroundings would allow the suture point on the tendon to be pulled through this range. If the finger was immobilized after repair in a mid-position, half the range was necessary to complete a movement of full flexion, and half in the other direction to extend the finger fully. That meant that the surrounding tissue must be capable of being stretched for about 1·6 centimetres in each direction. With ordinary care that could readily be achieved in any tendon in any situation except the region of the digital theca.

With delicate technique, and by removing most of the rigid tendon sheath in the region, a good range of movement could be obtained provided the posterior wall of the sheath and its underlying bone or joint had not been damaged. Direct repair should always be the first line of attack in young children, in whom scar resolution was rapid and sound healing much quicker, and remodelling of damaged tissues could still occur to a limited degree. In children, the only contraindications to primary repair of tendons, irrespective of where they were divided, were fear of sepsis because of time-lag or the nature of the injury, and lack of proper facilities, personnel and equipment. No attempt should ever be made to repair both tendons to a finger, for scar bound them together at the point of suture, and the independent action of the one more distally inserted was lost if both were repaired. All attention should be concentrated on the profundus tendon, and the sublimis tendon should be removed from the field to obviate cross-union.

In older children and adults, even the most careful direct repair might fail. However, if the point of tendon suture was transferred from the finger to the palm, results should be achieved comparable to the vastly better results when the tendons were cut in the palm or at the wrist.

That was the basis of the operation of tendon grafting for flexor tendons divided in the finger. By complete removal of both flexor tendons from the proximal part of the palm to the insertion of the *flexor profundus*, and their replacement by a full tendon graft which was continuous and surrounded by intact synovium between those points, the main point of suture was transferred to the palm. The distal suture point was beyond the last joint to be activated, and the extent of scar there was unimportant.

Dr. Wakefield said that the procedures mentioned were carried out a few weeks after injury, and the primary operation was confined to the skin and digital nerves. However, that was a matter of expediency and was necessary only because of the inadequate facilities for emergency tendon graft in Melbourne. If that defect was ever corrected the operations would take their place as primary procedures.

After presentation of his paper, Dr. Wakefield demonstrated, by means of colour cinematography, the surgical technique of tendon transplant for flexor tendons divided in the finger.

THE MEDICAL SCIENCES CLUB OF SOUTH AUSTRALIA.

A MEETING of the Medical Sciences Club of South Australia was held on June 6, 1952, in the Anatomy Lecture Theatre, Frome Road, Adelaide.

The Function of Biotin in Enzyme Systems.

MR. P. A. TRUDINGER presented a general survey of our present knowledge on biotin action. He said that biotin had been reported to affect the following enzyme systems: aspartase, serine and threonine deaminases, oxalacetate decarboxylase, succinic acid dehydrogenase and succinic acid decarboxylase. In addition, it appeared to play a role in the synthesis of citrulline in the turkey liver. There was evidence that (in many of the cases mentioned) biotin did not exert its effect *per se*, but in the form of a complex with some other organic molecule or molecules; adenylic acid had been suggested as part of the complex. Two biotin complexes had been isolated from yeast—biocytin and Lichstein's "coenzyme". The latter behaved more efficiently than biotin in the deaminases listed. A similar complex had also been isolated from liver. The evidence concerning the action of biocytin was contradictory, but it did not appear to function as the "coenzyme" of the biotin-requiring systems. It was possible that the action of biotin might not be the same in all cases. A number of other effects of the vitamin were listed, for example, its relationship to oleic acid, which indicated the variety of manifestations a lack of the substance produced. Mr. Trudinger discussed two theories on biotin action involving first carbon dioxide transfer and secondly internal hydrogen transfer. He said that it was possible also that biotin functioned in the synthesis of some enzyme systems.

Pædiatric Trends Overseas.

DR. E. B. SIMS gave a brief account of pædiatric trends overseas. He said that the organization of undergraduate teaching in Britain was now firmly centred in professorial departments of child health. There were chairs in "child health" (a term adopted because of its positive suggestion of a scope greater than the mere study of disease in childhood) in most of the universities, and they were proving, on the whole, to be satisfactory instruments for the correlation of the various branches of this important subdivision of

medical education. It was considered that, in general, the holders of clinical chairs should devote all their time to their teaching and research tasks. However, there was always a danger that the training of medical students in such a professorial department might continue to be (as it tended to be at present in the medical schools of Australia) rather out of touch with both the community at large and the problems of medical practice that the graduate must ultimately face. Various techniques could be employed to prevent that. The "thousand-family survey" in Newcastle-upon-Tyne was one such technique. Sir James Spence, Professor of Child Health in the University of Durham, had organized from his department a progressive study of the incidence and patterns of minor disease in the family unit. That served both as a method of acquiring data not available to hospital workers, and as a means of keeping the staff and students constantly aware of the problems of medical practice in the home. Approximately a thousand families were selected at random by the chance that a baby was born into each of them in two chosen months. The subsequent history of each baby was followed by regular home visits, and the medical events in each family were observed and recorded. Much valuable information was being collected, especially about the incidence of infective disease, and—even more important—the university department of child health was in constant touch with the community.

Other techniques that might be used to keep professorial departments aware of the problems of practice that the students must ultimately face included the greater employment of general practitioners in various ways in the training of students, and even the conducting of a model family practice by university teachers. Such schemes perhaps were more likely to develop in Britain, because its National Health Service had made the questions of competition and payment less difficult. In any case, the proper demonstration of the art of consultation in the out-patient department of a children's hospital could teach the student a great deal about doctor-patient relationships.

Another aspect of teaching that one noticed overseas was the great use of various visual aids. One particularly was impressed by various medical photographic units, and by the valuable work done by full-time medical artists. Colour television was being tried to demonstrate surgical techniques to large groups, and would no doubt find its place in teaching. Professor Fanconi's lecture theatre in the *Kinderspital* at Zurich was a striking example of the impressive use of most modern aids.

Turning to some clinical problems, Dr. Sims discussed trends in resuscitation of the newborn. He said that various older methods (such as mouth-to-mouth breathing) of stimulating the baby who was slow to start breathing must be condemned. In those cases one was confronted with the vicious circle of anoxia, which meant that the longer the baby failed to breathe, the more the respiratory centre was depressed and the less likely it became that respiration would ever be established. Two experimental methods of breaking the vicious circle were rather promising. The first was the rhythmic stimulation of the phrenic nerve through the intact skin in the neck with an electrical appliance. The other method was the introduction of oxygen into the alimentary tract by means of a catheter in the stomach. Apparently enough oxygen could be absorbed in the favourable case to break the anoxic vicious circle, and to resuscitate the child. All methods, of course, could be of value only after the airway had been cleared of obstructions.

A number of biochemical syndromes were becoming differentiated from the common group of "failures to thrive" in infancy. One interesting disease was galactosæmia, in which, as a result of the infant's inability to metabolize the lactose in milk, galactose was excreted in the urine and severe malnutrition rapidly resulted. An appropriately balanced substitute for milk had to be fed to the babies affected, and the outlook was then fairly good.

Another biochemical problem was posed by the de Toni-Fanconi syndrome, in which various amino acids were excreted in the urine, and severe marasmus developed in the infant. Use of a "paper chromatograph" was a simple technique for demonstrating the amino aciduria if present, and was a necessary investigation in all "failures to thrive". No treatment for the condition was available.

A selective failure of one function of the renal tubules had been shown to cause yet another type of "failure to thrive". That was the tubular failure to reabsorb bicarbonate from the glomerular filtrate, with resulting hyperchlorsemic acidosis and alkaline urine. The condition was called "renal acidosis"; if it was unrelieved, calcium became deposited in the kidney and the disease was then called "nephrocalcinosis". The infant became irritable, hypotonic and constipated. The daily administration of massive doses of alkali, sometimes for a prolonged time, relieved some of these children.

Another selective failure of one part of an organ with several functions was occasionally met with in congenital adrenal cortical hyperplasia, associated with physical precocity in boys and pseudohermaphroditism in girls. The sexual changes resulted from hyperplasia of the androgenic zone of the adrenal cortex, but the hyperplasia was at the expense of the cells controlling water and salt balance. The consequence was an occasional severe attack of unexplained dehydration, and even Addisonian crises, or sudden death.

Finally, Dr. Sims reminded his listeners that the cause of pink disease was still unknown. The views of Cheek and Hicks on the ætiological importance of sodium deficiency and adrenal hypofunction had not been accepted. Another theory, emanating from America, was that mercury poisoning might be the cause. It was certainly true that many of the features of pink disease could arise as a result of chronic mercury poisoning in susceptible infants. Whilst the mercury theory had some attractive features, it, too, could not explain all cases. Nevertheless, the use of teething powders, and other mercurial medicines and ointments, should probably be avoided in infancy.

A MEETING of the Medical Sciences Club of South Australia was held in the Anatomy Lecture Theatre, Frome Road, Adelaide, on May 2, 1952.

Diapause in the Eggs of the Field Cricket.

DR. T. O. BROWNING read a paper on diapause in the eggs of the black field cricket *Acheta commodus* Walker. Diapause was defined as a cessation or slowing-down of morphological development which was not a direct result of unfavourable environmental circumstances.

Dr. Browning said that in some species in which diapause occurred the phenomenon was manifest in each individual in each generation, whilst in other species only a proportion of the individuals in some or all generations entered diapause. It was usually found that an exposure to relatively low temperature of appropriate duration, given at the appropriate stage of development, promoted the continuation of development when the individual was returned to temperatures within its developmental range.

It was shown that in certain species in which a facultative type of diapause occurred (for example, *Acheta commodus*) certain conditions of food, temperature, moisture and light tended to increase the proportion of individuals that entered diapause. It was concluded that diapause was most likely to occur in individuals that had grown slowly.

Evidence was brought forward suggesting that diapausing individuals differed from non-diapausing ones in the type of fat stored. It was suggested that diapause might be due to the inability of the individuals to metabolize the particular kind of reserve substances they contained and that the processes that occurred during diapause were related to the changing of the nature of the fat or the building up of new enzyme systems capable of metabolizing the existing food reserves.

Renal Function in Adrenal Insufficiency.

DR. R. A. BURSTON read a paper on renal function in adrenal insufficiency. He said that in patients with adrenal insufficiency, the most obvious defect in renal function was the failure of diuretic response to ingested water due to excessive tubular reabsorption of water. The defect was not affected by desoxycorticosterone acetate or testosterone, but was overcome by cortisone. Evidence was presented suggesting that cortisone restored the diuretic response by a direct action on the renal tubular cells.

The Lupus Erythematosus Cell Phenomenon.

DR. J. A. BONNIN read a paper on "The Lupus Erythematosus Cell Phenomenon".

Out of the Past.

In this column will be published from time to time extracts, taken from medical journals, newspapers, official and historical records, diaries and so on, dealing with events connected with the early medical history of Australia.

A MEDICAL OFFICER AT MELVILLE ISLAND.[1]

Colonial Secretary's Office,
17 January, 1827.

C. Turner, Esq.,
Late Assistant Surgeon,
Melville Island.

Sir,

In reply to your letter of 6th ultimo on the subject of the rate of allowance to be made to you for your services at Melville Island I am directed by the Governor to inform you that considering the privations of your situation in a new and remote settlement His Excellency has been pleased to comply with your application to be paid at the same rate of salary as your successor Mr. GOLD: and the auditor has accordingly been instructed to prepare a warrant in your favour for the sum of six hundred & thirty four pounds, five shillings and fourpence which appears to be the amount due to you at the rate of 21/- per diem from the 23rd August 1824 to 2nd December last after deducting two hundred and thirty eight pounds, six shillings and eightpence already paid to you.

I have, &c.,
ALEXR. McLEAY.

Colonial Secretary's Office,
Sydney,
10 February, 1827.

Charles Turner, Esq.

Sir,

In acknowledging the receipt of your letter of the 7th inst. I am directed to inform you that the Governor trusts that your long detention at Melville Island in the medical charge of the soldiers and marines as well as the civil Establishment there, will not be injurious to your interests or interfere with your views of promotion in the service to which you belong, as that detention was quite unavoidable notwithstanding your repeated applications to be relieved.

I am commanded further to add this His Excellency has reason to be highly satisfied with your conduct during the time you have served under the Government.

I have, &c.,
ALEXR. McLEAY.

[1] From the original in the Mitchell Library, Sydney.

Correspondence.

THE SEEDS OF TIME: THE IMPACT OF MICRO-BIOLOGY ON HUMAN AFFAIRS SINCE LISTER'S DAY.

SIR: Sir Macfarlane Burnet's Listerian Oration, in its first part an interesting summary of the history of medicine and infectious disease, went on to correlate the history with man's social systems and future.

It is regrettable that such incorrect statements as, for example, "In the past, infectious disease, particularly infectious disease of infancy and childhood, was the main agent in keeping human population at a level with a tolerable relationship to food supply and other natural resources", and "The general impression at the moment is that the optimal population of the world has already been reached and that in large areas of Asia the population is close to the maximum that the land can keep alive", should have formed the basis of Sir Macfarlane Burnet's conclusions.

There is no evidence in past history that human populations were as a general rule "at a level with a tolerable relationship to food supply". There is every evidence that the great majority of mankind existed below a "tolerable level in relation to existing food supplies", that is, in a state of semi-starvation in the presence of adequate food supplies or of the possibility, with the technique of the age, of ensuring good food supplies. For example, take the depopulation of Europe during the fall of the Roman Empire or the famines in France and Ireland, where the census showed the existence of adequate food supplies.

Wars, changes in the property relations of the land, robbery and destruction by conquerors, enslavement of peoples under foreign rule, kept the masses of the people semi-starved and filthy, subject to death by infectious disease admittedly. Surely it is not logical to make the consequence the cause.

As for his second statement, Sir George Knibbs, our famous statistician, computed in 1917 that the earth with the existing level of technique could maintain in comfort four times its present population. It is undeniable that at the moment the great part of the earth's arable land is still being cultivated by antiquated inefficient methods.

In fact all over the "free" world food production is limited by the shell of outworn property relations, and the limitation of the family that is being practised by a certain section of the "free" peoples is no more than a symptom of this transient "pre-natal" stage.

Sir Macfarlane Burnet calls Lysenkoism a blight. Really this is strange. With Lysenkoism the Union of Socialist Soviet Republics, the New Democracies and China are rapidly increasing their food production. Will the learned bacteriologist explain how a "blight" can produce such effects?

This rapidly increased food production is one of the reasons why the increase in population in the Soviet Union approaches the physiological fifty per thousand. Yet no Soviet scientist is glad of this because it will allow the development of more beneficial mutations or the extermination of more deleterious mutations. On the contrary the Soviet scientists say that with an economic system that ensures continually improving living conditions it is possible to raise human beings under continually improving physiological, cultural and spiritual conditions, thus influencing man at the time of youth when, like all living things, man is most susceptible to the environment.

According to Michurin's experience with plants and that of animal breeders, it seems probable that these environmental influences, if repeated in several generations, will induce very desirable changes in heredity.

Finally, man in the past has suffered much, in the last analysis, from his ignorance of the world in which he lives. It is quite true that every advance in his knowledge has faced him with fresh problems, and so it will remain to the end of time. But it is also true that every advance in his knowledge has increased his control of the world and himself. I join with Sir Macfarlane Burnet in urging the study of genetics; but not of genetics cramped and mutilated by a dying social system, which is every day becoming more immobile and helpless in a "totalitarian" array of useless splints—sales tax, boards, arbitration courts, restriction of imports, control of rents and capital issues *et cetera*.

In the immediate interest of Australian genetics, I would recommend an investigation into the cause and cure of inflation and crisis which are now interfering with, and in the near future will tremendously hamper, the genesis of sound Australians.

Yours, etc.,
G. P. O'DAY, M.D.

473 Bourke Street,
Melbourne, C.1,
July 4, 1952.

SUBACUTE BACTERIAL ENDOCARDITIS CAUSED BY ERYSIPELOTHRIX RHUSIOPATHIÆ.

SIR: In a letter published on June 28, 1952, Dr. W. E. David criticizes Dr. G. E. Bauer for having pointed out in his letter of May 24, 1952, that a diagnosis of subacute bacterial endocarditis can and should be made before the appearance of many of the "classical" signs of the advanced disease. In support of this criticism Dr. David cites a passage from the last edition of Paul Dudley White's text-book, "Heart Disease".

Surely we all realize after some years in the practice of medicine, that all too many of our patients do not read a text-book of medicine before consulting us about their symptoms. Is it not the very essence of the duty of the specialist, old or modern, and in whatever branch of medicine, to recognize a disease before all the classical signs have appeared, and in spite of a variance of some symptoms or sign with the text-book description? Are not the many case reports appearing in the medical literature, and

describing unusual manifestations of various disease entities, intended to teach us some of the possible variations from the original theme? To cite a text-book description of a disease in sole support of a diagnostic contention is, I feel, a regression to an undergraduate level of knowledge.

Yours, etc.,

1361 Pacific Highway, Turramurra, New South Wales. GEORGE SELBY.

July 7, 1952.

STARCH POWDER FOR SURGEONS' GLOVES.

SIR: An advertisement in this week's issue of the journal (June 28) recommends a method of sterilizing a starch glove powder. This method has been approved by the New South Wales Health Department. The powder is to be autoclaved for thirty minutes at 15 pounds' pressure. It is submitted that this advice is poor and could be dangerous. Fifteen pounds' pressure will not necessarily sterilize anything even in thirty hours. The temperature at which the autoclaving is done is the important thing. Unless an autoclave has a thermometer on it to record the temperature in the coolest part of the sterilizing chamber, the operator cannot assure sterilization of the contents. This knowledge is almost of a subintellectual order, and one must apologize for mentioning it, but many of us might be tempted to follow the advice of a health department literally. I suggest that autoclaving of anything be done at a temperature of 240° F. for thirty minutes. The pressure, of course, is only one of the means by which this temperature is reached. Perhaps, sir, there are still in our country autoclaves not fitted with thermometers. In which case we may go on expecting bacterial tragedies in our practices.

Yours, etc.,

Ballow Chambers, Wickham Terrace, Brisbane. JOHN R. S. LAHZ.

July 3, 1952.

A HEADACHE FOR A HUSBAND.

SIR: The following extract from a patient's letter may amuse those of your readers who turn to the back pages first.

"On leaving you I thought I would send my husband a telegram stating the trouble, to put his mind at rest because I could not get a plane for a couple of days and I knew he had been imagining all sorts of things wrong with me. I worded the telegram: 'Saw doctor this morning complaint migraine.' But when the post office telephoned the message to him they said: 'Saw doctor this morning complaint my brain.' Well, as you can imagine, he was very upset when I arrived home . . ."

In migraine the "i" is short, as in "hypermetropia".

Yours, etc.,

185 Macquarie Street, Sydney. DOUGLAS ANDERSON.

July 1, 1952.

Post-Graduate Work.

THE POST-GRADUATE COMMITTEE IN MEDICINE IN THE UNIVERSITY OF SYDNEY.

The Royal Prince Alfred Hospital Medical Officers' Association Reunion Week.

THE Royal Prince Alfred Hospital Medical Officers' Association Reunion will be held from October 13 to October 24, 1952. It will cover medicine, surgery, gynæcology and obstetrics. A number of places will be reserved for post-graduate students who are not members of the Association, who should make application to attend to the Course Secretary, The Post-Graduate Committee in Medicine, 131 Macquarie Street, Sydney. Telephones: BU 5238, BW 7483.

Clinical Meetings at Balmoral Naval Hospital.

The Post-Graduate Committee in Medicine in the University of Sydney announces that clinical meetings will be held at the Balmoral Naval Hospital on the following Tuesdays at 2 p.m.: August 12, Dr. C. G. McDonald, "Nephritis"; September 9, Dr. J. Cobley, "The Diagnosis and Management of a Diabetic with Some Discussion on Complications"; October 14, Dr. H. Windsor, "Fundamental Principles in the Diagnosis of Chest Disease"; November 11, Dr. R. Reader, "Rheumatoid Arthritis"; December 9, Dr. F. Mills, "Recent Advances in Cardiac Surgery". Clinical cases will be shown after the lectures. All members of the medical profession are cordially invited to attend.

Week-End Course at Taree.

The Post-Graduate Committee in Medicine, in conjunction with the Eastern District Medical Association, will hold a week-end course at Taree on Saturday and Sunday, August 16 and 17, 1952. The programme is as follows:

Saturday, August 16, at the Nurses' Home, Eastern District Hospital, Taree: 2.45 p.m., registration; 3 p.m., "Obstetrical Emergencies", Dr. Bruce Williams; 4.30 p.m., "Some Chronic Nervous Diseases and Their Management", Dr. Eric Susman.

Sunday, August 17, at the Nurses' Home, Eastern District Hospital, Taree: 9 a.m., "Toxæmias of Pregnancy", Dr. Bruce Williams; 10.45 a.m., "Hypertension", Dr. Eric Susman; 2 p.m., annual general meeting of the Eastern District Medical Association.

The fee for attendance at the course will be £3 3s. Those wishing to attend are requested to notify Dr. Angus McNeil, Honorary Secretary, Eastern District Medical Association, 89 River Street, West Kempsey, particularly mentioning whether hotel accommodation is required.

Members are asked to note that the annual subscription to the Eastern District Medical Association (£1 1s.) is now due.

Week-End Course at Lismore.

The Post-Graduate Committee in Medicine, in conjunction with the North Eastern Medical Association, will hold a week-end course at Lismore on Saturday and Sunday, August 2 and 3, 1952. The programme is as follows:

Sunday, August 2, at Lismore Base Hospital: 9.30 a.m., clinico-pathological conference; 11.30 a.m., "Thyroid Disease", Dr. F. F. Rundle; 2 p.m., "Recent Advances in Clinical Medicine", Dr. C. R. B. Blackburn; 3 p.m., "Hepatitis", Dr. V. J. McGovern; 4.30 p.m., "Recent Surgical Advances in Gastro-Enterology", Dr. F. F. Rundle.

Sunday, August 3, at Lismore Base Hospital: 9.30 a.m., "Disorders of Splenic Function", Dr. C. R. B. Blackburn; 11 a.m., "Nephritis", Dr. V. J. McGovern; 2 p.m., meeting of the North Eastern Medical Association.

The fee for attendance at the course will be £4 4s. (including £1 1s. for entertainment expenses). Those wishing to attend are requested to notify Dr. Nugent Brand, Honorary Secretary, North Eastern Medical Association, Molesworth Street, Lismore, as soon as possible.

Royal Australasian College of Surgeons.

FINAL FELLOWSHIP EXAMINATION.

THE next meeting of the Court of Examiners for the final examination for Fellowship of the Royal Australasian College of Surgeons will be held at the College in Melbourne beginning on Thursday, May 7, 1953.

Candidates who desire to present themselves at this examination should apply, on the prescribed form, to the Censor-in-Chief for permission to do so on or before April 1, 1953. The appropriate forms are available from the Secretary, Royal Australasian College of Surgeons, Spring Street, Melbourne, C.1.

Candidates who have been approved by the Censor-in-Chief, but who have not yet presented themselves for examination, may present themselves at this examination, provided they notify the Secretary of their intention to do so by April 1, 1953.

The examination fee is £21 *plus* exchange on cheques drawn on banks outside Melbourne, and must be paid to the Secretary by April 1, 1953.

PRIMARY FELLOWSHIP EXAMINATION.

1. A PRIMARY examination in anatomy (including normal histology) and applied physiology and the principles of pathology will be conducted in Melbourne in November, 1952.

2. The examination will begin with written papers on Thursday, November 13, 1952.

3. The examination is reciprocal with the primary examination for Fellowship of the Royal College of Surgeons of England.

4. Each candidate will be notified by post of the result at the termination of the examination.

5. The examination is open to graduates of not less than one year's standing of a medical school approved by the Council of the College for the purpose.

6. Candidates must submit evidence of their qualification, and of the date of acquirement thereof.

7. Forms of application for admission to the examination may be obtained from the Secretary, Royal Australasian College of Surgeons, Spring Street, Melbourne, C.1.

8. The fee for admission, or readmission, to the examination is £15 15s. Australian currency (*plus* exchange on cheques drawn on banks outside Melbourne). The fee must be forwarded with the form of application so as to reach the Secretary at his office not later than October 1, 1952.

Naval, Military and Air Force.

APPOINTMENTS.

THE undermentioned appointments, changes *et cetera* have been promulgated in the *Commonwealth of Australia Gazette*, Number 47, of July 3, 1952.

NAVAL FORCES OF THE COMMONWEALTH.

Permanent Naval Forces of the Commonwealth (Sea-Going Forces).

Promotion.—Surgeon Lieutenant Charles Vaughan Phayre Ryall is promoted to the rank of Surgeon Lieutenant-Commander (for short service), dated 21st October, 1951.

Appointment.—John Roger McNeill (Surgeon Lieutenant (for short service)) is appointed Surgeon Lieutenant, with seniority in rank of 10th April, 1950, dated 20th December, 1951.

Citizen Naval Forces of the Commonwealth.

Royal Australian Naval Reserve.

Appointment.—Richard John Mulhearn is appointed Surgeon Lieutenant, dated 23rd April, 1952.

Transfer to Retired List.—Surgeon Lieutenant-Commander Cecil Alexander Gardiner is transferred to the Retired List, dated 10th May, 1952.

Resignation.—The resignation of James Aloysius Foedus Flynn of his appointment as Surgeon Commander is accepted, dated 28th April, 1952.

AUSTRALIAN MILITARY FORCES.

Royal Australian Army Medical Corps.

The following officers relinquish the provisional rank of Captain and are transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (1st Military District) in the honorary rank of Captain, 7th April, 1952: QX700151 G. S. Briggs and QX700152 J. K. Syme.

VX700269 Captain (provisionally) T. F. Spring relinquishes the provisional rank of Captain and is transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (3rd Military District) in the honorary rank of Captain, 8th April, 1952.

WX700133 Captain (provisionally) K. O. M. Fitzpatrick relinquishes the provisional rank of Captain and is transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (5th Military District) in the honorary rank of Captain, 18th April, 1952.

To be Captains (provisionally).—VX700274 Peter Kirby, 3rd April, 1952, QX700154 Bruce Heath Gutteridge, 7th April, 1952, and NX700359 John Graham Wells, 15th April, 1952.

Australian Regular Army.

Royal Australian Army Medical Corps.

To be Temporary Major, 15th May, 1952.—2/40068 Captain E. G. H. Manchester.

To be Captain, 17th December, 1951, with a Short Service Commission for a Period of One Year.—1/8048 John Lee Jameson (Captain)

DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK ENDED JUNE 28, 1952.[1]

Disease.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Australian Capital Territory.	Australia.
Acute Rheumatism	..	..	..	..	..	..	..	..	..
Amœbiasis	..	..	1	..	..	..	..	..	1
Ancylostomiasis	..	..	13	..	..	..	..	..	13
Anthrax	..	..	..	..	..	..	..	..	..
Bilharziasis	..	..	..	..	..	..	..	..	..
Brucellosis	..	..	1(1)	..	..	..	..	..	1
Cholera	..	..	..	..	..	..	..	..	..
Chorea (St. Vitus)	..	..	..	..	..	..	..	..	..
Dengue	..	..	..	..	..	..	..	..	..
Diarrhœa (Infantile)	..	..	1(1)	..	..	..	1	..	2
Diphtheria	8(4)	1(1)	20(6)	..	1(1)	2(2)	..	..	32
Dysentery (Bacillary)	..	2(2)	4(4)	3(3)	15(12)	..	..	..	24
Encephalitis	..	1	..	..	..	..	..	..	1
Filariasis	..	..	..	..	..	..	..	..	..
Homologous Serum Jaundice	..	..	..	..	..	..	..	..	..
Hydatid	..	..	..	..	..	1(1)	..	..	1
Infective Hepatitis	..	..	..	..	18(11)	..	..	..	18
Lead Poisoning	..	..	..	..	..	..	..	..	..
Leprosy	..	..	..	..	..	..	..	..	..
Leptospirosis	..	..	7	..	..	..	..	..	7
Malaria	..	..	2	..	..	..	..	..	2
Meningococcal Infection	6(4)	6(5)	3	..	1(1)	..	..	..	16
Ophthalmia	..	..	..	..	..	..	..	..	..
Ornithosis	..	..	..	..	..	..	..	..	..
Paratyphoid	..	..	..	..	..	..	..	..	..
Plague	..	..	..	..	..	..	..	..	..
Poliomyelitis	3(1)	2(1)	..	6(3)	2	..	..	..	13
Puerperal Fever	..	..	..	..	..	..	..	..	..
Rubella	..	4(3)	..	..	1(1)	..	..	..	5
Salmonella Infection	..	..	..	..	1(1)	..	..	..	1
Scarlet Fever	17(6)	33(25)	10(9)	2(2)	4(4)	5	..	..	71
Smallpox	..	..	..	..	..	..	..	..	..
Tetanus	..	..	..	..	..	..	..	..	..
Trachoma	..	..	..	..	..	..	..	..	..
Trichinosis	..	..	..	..	..	..	..	..	..
Tuberculosis	47(34)	10(4)	23(20)	6(5)	10(5)	2(1)	1	..	99
Typhoid Fever	1(1)	..	..	..	..	..	..	..	1
Typhus (Flea-, Mite- and Tick-borne)	..	..	2(1)	1(1)	2(2)	..	..	..	5
Typhus (Louse-borne)	..	..	..	..	..	..	..	..	..
Yellow Fever	..	..	..	..	..	..	..	..	..

[1] Figures in parentheses are those for the metropolitan area.

Citizen Military Forces.

Northern Command: First Military District.

Royal Australian Army Medical Corps.—1/39096 Captain (provisionally) E. F. McGuinness relinquishes the provisional rank of Captain and is transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (1st Military District) in the honorary rank of Captain, 17th February, 1952.

Eastern Command: Second Military District.

Royal Australian Army Medical Corps.—The provisional rank of 2/126984 Lieutenant-Colonel R. E. Wherrett is confirmed.

Central Command: Fourth Military District.

Royal Australian Army Medical Corps.—4/31906 Captain M. W. Elliott ceases to be seconded for post-graduate studies in the United Kingdom, 20th February, 1951. To be Captains (provisionally), 1st May, 1952: 4/32014 Henri Hugo Albert Sauer and 4/32015 William David Proudman. To be Temporary Major, 7th May, 1952: 4/31907 Captain R. A. Burston.

Tasmania Command: Sixth Military District.

Royal Australian Army Medical Corps.—The provisional appointment of 6/15537 Captain W. L. Elrick is terminated, 31st December, 1951. To be Captains (provisionally): 6/15537 William Lindsay Elrick, 1st January, 1952, and 6/15247 Alexander Sandford Wood, 2nd May, 1952.

Reserve Citizen Military Forces.

Royal Australian Army Medical Corps.

3rd Military District.—The resignation of Honorary Captain W. S. Sewell of his commission is accepted, 18th March, 1952.

6th Military District.—Captain A. L. Stephenson is granted the honorary rank of Major, 7th May, 1952.

ROYAL AUSTRALIAN AIR FORCE.

Air Force Reserve: Medical Branch.

The following are appointed to commissions with rank as indicated: (Flight Lieutenant (Temporary Squadron Leader)) Philip Arnold Deck (267790), 2nd July, 1951; (Flight Lieutenant) James Stewart Rogers (267950), 11th December, 1951, Donald Edmund Copping (297527), 29th February, 1952.

Notice.

THE ROYAL NORTH SHORE HOSPITAL OF SYDNEY.

A MEETING of the Unit of Clinical Investigation of the Royal North Shore Hospital of Sydney will be held on Thursday, July 31, 1952, at 5 p.m. A short communication will be given by D. B. Morell, Ph.D., on "Some Enzymes in Milk and Tissue". All those who are interested are invited to attend.

AN HONOUR FOR DR. H. M. HEWLETT.

DR. H. M. HEWLETT, of Melbourne, has been honoured by the inclusion of his name amongst those of radiological pioneers recorded at the *Fondation Antoine Béclère* in Paris. We congratulate Dr. Hewlett on this honour.

Nominations and Elections.

THE undermentioned have applied for election as members of the New South Wales Branch of the British Medical Association:

Greenaway, John Moore, M.B., B.S., 1951 (Univ. Sydney), Royal Prince Alfred Hospital, Camperdown, New South Wales.

Jolley, Amy Beryl, M.B., B.S., 1952 (Univ. Sydney), 6 Evans Street, Waverley, New South Wales.

Barnett, John Sadler, M.B., B.S., 1952 (Univ. Sydney), Sydney Hospital, Macquarie Street, Sydney.

Manheim, Anna, registered in accordance with the *Medical Practitioners Act*, 1938-1950, Section 17 (1) (*c*), 10A Challis Avenue, Potts Point, New South Wales.

The undermentioned have been elected as members of the New South Wales Branch of the British Medical Association: Anderson, Peter Francis, M.B., B.S., 1952 (Univ. Sydney); Beith, John McNeil, M.B., B.S., 1952 (Univ. Sydney); Carey, Enid Menary, M.B., B.S., 1952 (Univ. Sydney); Curlewis, Brian Warren (provisional registration), M.B., 1952 (Univ. Sydney); Farrelly, Margaret Catherine Ethel (provisional registration), M.B., 1952 (Univ. Sydney); Goodman, Benjamin Nathan, M.B., B.S., 1952 (Univ. Sydney); Harley, John Douglas, M.B., B.S., 1952 (Univ. Sydney); Lines, Edward John, M.B., B.S., 1952 (Univ. Sydney); Meers, Harold Neil, M.B., B.S., 1952 (Univ. Sydney); Towers, Barrie, M.B., B.S., 1952 (Univ. Sydney); Morgan, Noel John, M.B., B.S., 1951 (Univ. Sydney); Walker, David Gerard, M.B., B.S., 1951 (Univ. Sydney); Laumberg, Maximilian, registered in accordance with the *Medical Practitioners Act*, 1938-1950, Section 17 (1) (*c*).

Diary for the Month.

JULY 31.—New South Wales Branch, B.M.A.: Branch Meeting.
JULY 31.—South Australian Branch, B.M.A.: Branch Meeting.
AUGUST 1.—Queensland Branch, B.M.A.: Branch Meeting.
AUGUST 5.—New South Wales Branch, B.M.A.: Organization and Science Committee.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Medical Secretary, 135 Macquarie Street, Sydney): All contract practice appointments in New South Wales.

Victorian Branch (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federal Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

Queensland Branch (Honorary Secretary, B.M.A. House, 225 Wickham Terrace, Brisbane, B17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 178 North Terrace, Adelaide): All Contract Practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205 Saint George's Terrace, Perth): Norseman Hospital: all Contract Practice appointments in Western Australia. All government appointments with the exception of those of the Department of Public Health.

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